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# Gleanings in Bee Culture

February, 1961 CONTENTS Vol. 89, No. 2

87 Years Continuous Publication by the Same Organization.

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**COVER PICTURE** – Young love always finds a way to tell its story. In this case, the little artist chose an excellent background on which to express his sentiments, since Cupid, according to the fable, is said to have dipped his arrow into honey before shooting it into the hearts of his victims. However, the backyard beekeeper that owns the hive in the picture probably did not share our opinion when he had to remove the young artist's ardent masterpiece.

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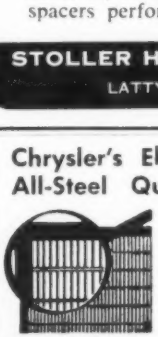

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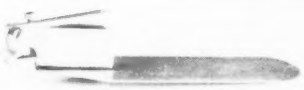

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# Monthly HONEY Report

**WALTER BARTH**
**Field Editor**
**San Antonio, Texas**

HONEY PRICES are remaining firm as we go into the new year. Some price cutting in retail packages is appearing but in most cases the standard packers are not involved. In all cases brought to our attention during the last few weeks only jobber brands were holding prices below standard packs. The five pound pails and the 22 ounce glass container are leaders in cutting. Good quality honey packed in five pound tins is selling in many areas for 99 cents and the 22 ounce goes for as low as 39 cents. Here is a bird's-eye view of the retail picture:

| SIZE | PRICE |
|---|---|
| ½ lb. | $ .21 to $ .25 |
| 1 lb. | .37 to .45 |
| 22 ounce | .39 to .53 |
| 2 lb. | .75 to .83 |
| 5 lb. round or equare | 1.59 to 1.75 |
| 5 lb. pails | .99 to 1.05* |
| ½ lb. chunk | .31 |
| 1 lb. chunk | .49 |
| 1¼ lb. chunk | .63 |

Over the Christmas holidays I had the opportunity to visit some local specialty food shops and spent all of my time reading honey labels. It was surprising to see how many variety packs are available and the prices that they bring. Here is a condensed picture of this phase of the market:

| PACK | PRICE |
|---|---|
| 1 lb. 1 oz. glass "barrel" of pure wild flower honey from Europe. Imported by Reese Foods. | $1.19 |
| Rita Miller's brand. 12 oz. container in sage, orange blossom or fancy clover. | $ .55 |
| R. R. Rice's* select Florida honey. 1 lb. round chunk honey (truly a solid pack.) | $1.59 |
| 14 oz. orange blossom | $ .69 |
| 8 oz. orange blossom | $ .45 |

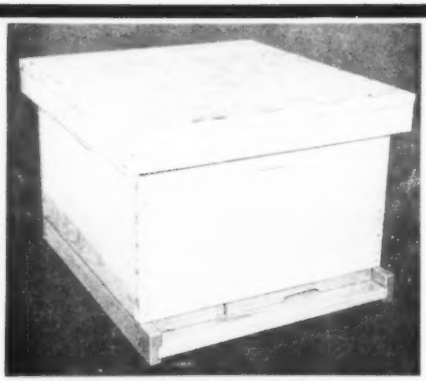
It isn't possible to speak of specialty items without mentioning comb honey. Comb honey in 24's is bringing from $8.40 to $10.50 per case with most sales on the lower end of the scale. There is very little comb honey about, according to reports. Honey syrup is still moving, although slowly, at 27 cents per 12 ounce bottle.

**Honey Helps the Alamo**

We always hear a lot about giving to help promote honey but seldom hear of incidents of where honey promotes something else. In this case it is a national shrine, The Alamo. This old mission and fortress is entirely self-supporting from donations from visitors and profits from the souvenir store. Honey is one of the big items (collected by bees on the Alamo grounds) that makes a profit for the Alamo. A special label with a picture of the Alamo on it tells of the food value of honey and folks seem to love the idea of a sweet remembrance from the Alamo.

* No defined grading on label. Buyer purchases honey without any knowledge of quality. Labels generally of a jobber's brand or a second-line brand of a reputable packer.

* Mr. R. R. Rice of Miami, Florida uses an extremely unusual label: a black honeybee with silver wings. The trade name and other data are printed entirely on the bee.



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| 100-499 | 1.30 | 4.25 | 5.40 | 6.30 | 7.20 |

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# THE STOVER APIARIES INC.

**Mayhew, Miss.**

There was lots of fun at the annual meeting of Texas beekeepers, and (left to right) Claud Burgin, Charles Engle and Roland G. Sykes enjoy a rejoinder from the audience.

# Texans Look at 1961

Chemical residues in honey, food and drug laws, lack of interest among young beekeepers and agricultural students in college. What are the solutions, will they come in 1961?

A. B. KENNERLY
College Station, Texas

"HONEY PRODUCERS run the risk of having their honey seized in interstate commerce if it is found to contain chemical residues above the legal limits," Dr. J. C. Gaines told members of the Texas Beekeepers' Association in their 79th annual meeting at Texas A. & M. College. "Beekeepers have not as yet felt the full impact of the Food Additives amendment passed in 1958."

The First Federal Food and Drug Act was passed in 1906. With the vast increase in the number of chemicals used in food processing, this law was amended in 1958 to prohibit the use of chemical additives in foods until they had been tested adequately to establish their safety. The burden of proof was placed on the chemical companies and the food processors.

**Traces of Drugs in Honey**

"The problem faced by beekeepers is in chemical residues left in the honey from the use of chemicals," Gaines pointed out. "For example, there might be a residue left on the combs when they are treated with certain chemicals against moths for winter storage. Should this residue get into honey the next season and be processed for interstate shipment, it could be subject to confiscation with heavy loss."

Sulfa drugs used in combatting disease may leave a residue which could make the honey subject to confiscation.

No tolerances have been established for any kinds of residues in honey. Such tolerances must be established for each insecticide and each product, the burden of this cost being placed on the manufacturer of the insecticide. Furthermore, the Food and Drug Administration cannot take action until the product is in the channels of interstate commerce. This means that the honey could be confiscated long after it left the producer's hands, but responsibility would eventually come back to him. One large dairyman in the South is unable to sell his milk because of DDT stored in the fat of his cows.

Gaines also reported on the progress of American foulbrood inspection work. "Incidence of the disease has been up and down over the past 20 years," he revealed. "But it has never been found in more than two percent of the colonies inspected."

**Four Problems in Beekeeping.**

President Charles Engle described what he considered to be four of the most serious problems facing beekeepers. These he listed as (1) lack of interest among young beekeepers who will replace the older beekeepers, (2) the advanced age of beekeepers now in in the business, (3) lack of competent trained help, and (4) lack of interest in beekeeping among students in agricultural colleges.

Asking for authority to appoint a committee to overcome the latter problem, he appointed such a committee to look into the possibility of setting up scholarships for any students at Texas A. & M. College who would take advanced courses in beekeeping.

Other solutions offered by Engle in-

Roland G. Sykes of San Antonio (left) and Edwin Neuse of Seguin are the newly elected president and vice president of the Texas Beekeepers' Association.

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FEBRUAR

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Some notables at the annual meeting of Texas beekeepers were (left to right) Edwin Neuse, Seguin; E. L. Evans, North Dakota; Ed Burleson, Waxahachie; Lawrence Lang, Corpus Christi; and I. M. Tomlin, San Antonio.

cluded sale of equipment by retiring beekeepers under a contract that would lower the initial investment for the young beekeepers, yet would give them a share in the business. This would provide some income to the retired beekeeper. He also urged beekeepers to cooperate with youth groups such as 4-H Clubs, Boy Scouts and Future Farmers of America. Summer work would offer training and experience to these boys from whose ranks may rise the future generations of beekeepers.

**What to do with Cappings**

Walter Barth, general manager of The A. I. Root Company of San Antonio, Texas, gave a report on the beeswax market.

A panel of beekeepers discussed problems involved in handling cappings. The panel with Jim Petty as moderator agreed that some kind of equipment is needed for separating honey from the cappings in an efficient manner and without darkening the honey. Some reported selling their cappings mixed in honey, a combination readily accepted by their customers. Dark cappings sell as well as light, they had discovered. This would not develop into a large market since only 1½ pounds of cappings can be obtained with each 100 pounds of honey, but it does suggest what to do with the cappings.

**Moving Bees**

"Moving bees in short distance migratory beekeeping has its problems," observed John Thomas, extension entomologist for Texas A. & M. College. "Most beekeepers report about the same procedures. They load at sundown or at early hours of daybreak when most bees are in the hives. Hives are moved open and unscreened. They are closed only when the beekeepers are loading and unloading the same night."

Thomas defined short distance moves as any distance less than 100 miles. He reported that most beekeepers leave only enough honey on the hives to last until bees can bring in nectar at the new location. However, if beekeepers use mechanical loaders, the amount of honey in the hives is of no importance. Some leave a weak colony or two at the old location to catch the strays as they return. It is a good plan to leave two or three colonies to hold the location if the beekeeper intends to use it again.

"Load the strongest colonies first if you're moving in the daytime," Thomas advises. "This tends to equalize numbers of bees in the colonies. Move at

(Continued on page 125)

When using a feeder can, it is not necessary to use an empty super.

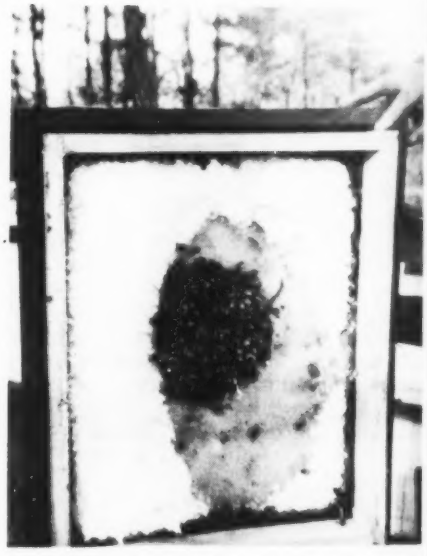
# Resolved- A Bigger Crop In 1961

**MILTON H. STRICKER**
**Stockton, N. J.**

**"Another thing I am going to do is to be more 'hardboiled' about killing queens."**

NOW IS THE season for New Year's resolutions, so I think I'll make just one: to try to get a bigger crop of honey in 1961.

To do this I'm going to have to get bigger colonies earlier since the honey crop in northern Jersey seems to be earlier than it ever used to be. Now to get these stronger colonies with an earlier build-up I am going back to feeding pollen supplement about the end of February. I used this for several years and had excellent results, but somehow in the past two years I have given it up. So, sometime in the coming February I intend to wade through the snow banks and take the first step toward earlier brood rearing.



I'm going back to feeding pollen supplement.

March first the next step will be in inspecting all colonies that are to be used for honey production and seeing if they have an ample supply of honey, an active queen, and enough bees to help that queen build up into an early

population peak that will provide a bigger crop.

All these colonies that can meet this requirement will be given a brood stimulant of a feeder can containing about six pounds of dry sugar mixed with warm water. It will not be necessary to carry empty supers to the yards to enclose these feeder cans since I intend to invert the escape board (deep side down) and place the feeder can over the escape hole, then place a stone on the feeder can. This will shed rain and keep the colony bee tight.

This stimulative feeding should pep up the queens and increase brood rearing so that the field force will be ready to gather a bumper crop when it starts. On a dollar and cents basis, this 60 cents worth of sugar will easily be paid back by an increase of three pounds of honey at the current price of twenty cents. Likewise, the money spent for pollen supplement and the sugar it contains should come back in an increased yield.

Resolved to have bigger colonies.

Of course, I am going to super earlier and, of course, without excluders, to house the increased brood. This will discourage swarming and remind me of the old saying: "You can't get a crop if you don't have the supers on!"

I am also going to take this expected crop off earlier, as I learned during 1960 that those colonies that had the crop removed, or at least part of it, during August, gave the beekeeper some surplus. Where North Jersey beekeepers left the crop to be extracted in September, bees turned it into excessive amounts of brood and by the time the fall flow came along, a lot of these bees had died and never were available to gather the aster flow which was extremely late in this area. Where I had removed the crop early, these bees were left some reserves of honey and seemed to build up enough to harvest enough for their own use. If their reserves had been depleted during August and I had had to feed dry sugar, it would have been easily paid for by the extra crop of honey I took off.

Another thing I am going to do is to be more "hardboiled" about killing queens, and though it won't help me in '61, it will be worth-while for 1962.

My requeening is always done in September, not only because it is the time when I am less busy with other chores, but it is also the time I have the most queens available from my own queen yards. At this time any queen that didn't produce a good crop is going to get "bumped". Too many times I've gone soft-hearted on a good looking queen, hoping she would do better next year, but no more. As you see, I am resolved to get a better crop in 1961 and even a better one in 1962.

I'm going to get my supers on earlier.

The author, looking at turnips and re-seeding crimson clover, planted for winter cover crop and bee pasture. — SCS photo by W. T. Brown.

# *Problems of Producing and Shipping Bees*

Each year we have watched the prices continue to climb and we sometimes wonder if we aren't being forced out of business.

**LOUIS HARBIN**
**Mobile, Ala.**



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THE BASIS FOR the package bee business is populous overwintered colonies. To get these colonies through the winter in prime condition in the face of all the elements is a problem. A weak colony is not a good source of package bees. The ratio of the young to the old bees is out of proportion. The taking of bees in this case will endanger the future production of the colony as well as affect the package colony.

At the start of winter there must be a good population of young bees and plenty of honey and pollen in the hive. Colonies may winter nicely but dwindle down in the spring for lack of stores to support early brood rearing.

Some seasons we have to make a special effort to encourage brood rearing on schedule. The producer must look into the hive with one eye and glance at the extended weather forecast with the other and couple this with nine parts good luck in order to propose a *grafting schedule.

Normally, the shipping season begins April first and we strive to have bees ready to go by this time. I recall the time when bees were hard to book in early April. Now some buyers want them in April or not at all. Others want their bees by mid-March.

For the past three seasons, inclement weather has prohibited early development of bees, consequently, young bees were not ready to ship on schedule.

The queen being the most important part of the package, we put the greater portion of our effort here. The size of the queen is usually a good indication of her environment during infancy. We are told that it is the feeding in the early stages of development that determines the number of ovarioles developed in a queen. These in turn determine her size to some extent. We make every effort to select the best cell raising colonies and we do everything humanly possible to influence good colony morale so that feeding of the larvae will be at its best.

Of course, everyone knows that good morale is governed by the abundance of nectar and pollen as influenced by good weather. Where the colony feeds the brood lavishly, the young queen seems to hasten her mating. By placing special drone producing colonies in and around the bee yard we can assure a bountiful selection for the queen. The abundance of drones can hasten the development and increase the percentage of perfect queens.

One of the gravest problems in our area is sufficient pasture for the various seasons. In our territory swamp and timberland was once the only major source of nectar and pollen. The past 10-years have seen a 25 percent decline in this source. Fire, of course, is our greatest scourge. Many acres of fine gallberry and titi pasture are ruined each winter and early spring by careless people, high winds, and matches. It seems inevitable that when a tract of timber land is cut, the next thing is fire. Our swamp timber is disappearing, ponds and swamps are being ditched and drained. This further facilitates logging operations. Maple, poplar, and gum are finding their way to the paper mill.

The westward expansion of our fair city is constantly engulfing our farm lands. Our farm populace seems to have forgotten their old stand-by, crimson clover and instead are relying on the grasses with an application of commercial nitrogen. Last but not least, we have the constant threat of insecticides. Their potency and rate of application are ever increasing. Application of insecticides by airplane is our greatest threat since the dust or spray will drift over a wide area. We would much rather have a ground application where the chemical can be localized.

We stress good pasture for the cell builders and queen yard. We practice planting good pasture right on top of them. Twenty acres of clover interseeded with turnip can furnish a great deal of pollen and nectar. For summer pasture, we seed buckwheat in native clover. Other seedings are in progress and we hope some day to bridge the gap without too much labor being involved in planting.

Pastures, by man or nature are fine in their own right, but there comes a day when stores for bees must be supplemented. Inclement weather can prove a great drain on stores especially in early build-up. Many recall the scarcity of bees and queens the first ten days of April 1960. In my opinion, this was due to adverse weather which affected

* Transferring young worker bee larvae into artificial queen cell cups.

the nectar and pollen supply. While using a medium size division board feeder, many of our colonies starved between feedings. Something had to be done to increase the volume of feed in relation to time allotted for the job. It was a simple case of feed them or lose them.

I had toyed with the idea of a comb-filler two years back and really didn't have to do too much planning. At the end of the fourth day with the aid of a cutting torch and arc welder, I had modified an old pump into a retaining tank with jets which would do a satisfactory job of filling combs with syrup. The model is by no means perfect, but it will feed 200 colonies with heavy syrup daily. Two men can do the job, but three make things work smoother.

It would seem that in the present generation the measuring stick reads in dollars and cents instead of feet and inches. Presently, time seems to be the essence in bee production. A producer must keep in mind the cost of production. He must cut the time of production and at the same time maintain quality. He must be his own inventor, engineer, and bookkeeper if he is to keep pace with the ever advancing civilization.

Cost of labor plus cost of materials plus a fair margin of profit should determine the cost of a finished product. But, the package bee business has gone modern. It too is the victim of high-volume low-profit operations. Presently, we have all kinds of apparatus to help us produce in volume so that we might sell in competition with others.

**Experienced Beemen Hard to Get**

The gravest problem of all now in bee production is that of labor. Experienced beemen are hard to come by and even harder to keep. Locally, our labor is high and inexperienced. A man of little or no experience can go into industry and draw twice the wage a bee producer can afford to pay.. A common truck driver can push a delivery truck at $70.00 per week. Why get bee stung? The continued rising cost of materials is second only to labor.

Even more discouraging is the fact that our youngsters are turning away from bees to the high wages of industry. Who will replace us and keep the bee industry alive?

Fred Harbin and sons, Louis and Douglas,

examine a pine

The problem of shipping bees is ever increasing. The past three years have seen the deletion of many express and mail trains from the rails. Not only is the express rate high, but open stations are getting harder to find. We must haul our express bees 20 miles. I heard one producer say that he hauled his bees 60 miles to a station. We know too that receiving on the other end is equally disheartening.

Delays in transit are costly in bee life. With train schedules what they are, many shipments, both parcel post and express are routed between towns in closed vans. We must ship on certain days so that bees will make connections where bi-weekly express trains are run. This doesn't confront you with too much of a problem until you have a rainy day and get behind.

Parcel post shipments with us are a displeasure. To begin with we must haul them 20 miles during business

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examine a pine seedling, which is a good source of pollen.—SCS photo by W. T. Brown.

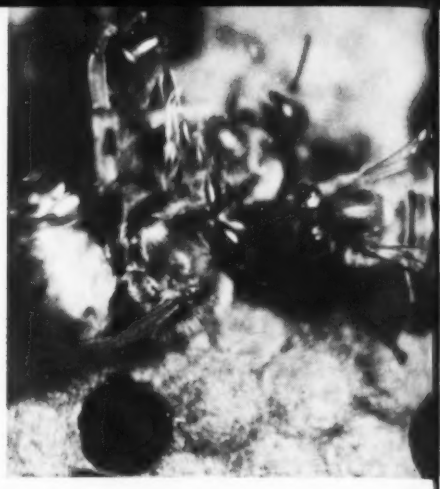
hours, second we must have all the hobo bees brushed off the screens before the shipment will be accepted. I have spent one hour getting 50 packages across the scales. One can imagine the queries put to the beeman by the spectators on such an occasion.

Other producers have tried air transportation and report having to devise special feeders for the packages to say nothing of having to find a carrier. Though the traveling time is short, the cost is high. If and when the kinks are ironed out, air transportation of bees may come into its own.

The buyer can best haul his own bees. Trucking would give him a chance to come South and see first hand some of the problems of the producer. Trucking in itself is a problem; each buyer has a different rig and therefore each requires a different loading. Many buyers are salvaging shipping cages and returning the next season to get a refill. There is quite a saving on the purchase price through this method.

Packages cleated for one truck usually will not fit another. One buyer will want his packages loaded crosswise of the direction of travel, the other lengthwise with the direction of travel. The producer welcomes the trucker who brings his packages already strapped and bee-tight. The real headache comes when a buyer shows up with five or six different kinds and sizes of packages to be strapped and filled with bees. We make every effort to sell a load of uniform packages and keep the buyer outfitted with that same package. We believe that in the future the major portion of the package bees sold in quantity will be trucked by the purchaser. Bees are arriving more timely and in better condition this way. In 1954 we put our own truck on the road and each year since, we have added a little knowledge which we try to pass on.

# A Duel To Death



The young queen was able to get on top of the older queen and insert her sting.

**NEIL GOODWIN**
**Natal, South Africa**

"She proceeded to race all over the comb intent on some deviltry."

BY THE END of June 1960, my hives were wintered down to one super apiece. I realize now that I should have left them with at least two, as the honey flow has been late this year. Anyhow I thought it wise to play safe, but with the early heat and restricted space in the hive, the bees took advantage of the weather conditions and queen cells mushroomed almost overnight.

On the 14th of August, I found there was still plenty of honey to be had and a lot of queen cells to be removed, in fact I received a nice haul of Royal Jelly in the bargain.

In the process of removing these cells, I discovered no less than 12 queens in one hive, all gnawing their way out of their "peanut" houses at the same time. I immediately requeened half a dozen hives, lost a couple that hatched out while doing this and was left with two beauties, which I placed in individual match boxes and kept for experiment.

That night, I telephoned a photographer friend of mine and asked whether she would be interested in taking pictures of the two queens fighting a royal battle and this was arranged for the following day. The next day, however, it was found that one of these queens had died, probably damaged in its box, or from fright or starvation. The problem was solved by removing a queen together with her lady workers, from a nucleus hive. With the camera set up under a 500-watt lamp, my friend proceeded to photograph her ladyship, well attended by her ladies-in-waiting, on an excellent background consisting of worker bee brood at all stages of incubation. The virgin queen was then released and without further ado, she proceeded to race all over the comb intent on some deviltry. The mature queen was unperturbed at all these goings on and quite unaware that an assassin was in her midst.

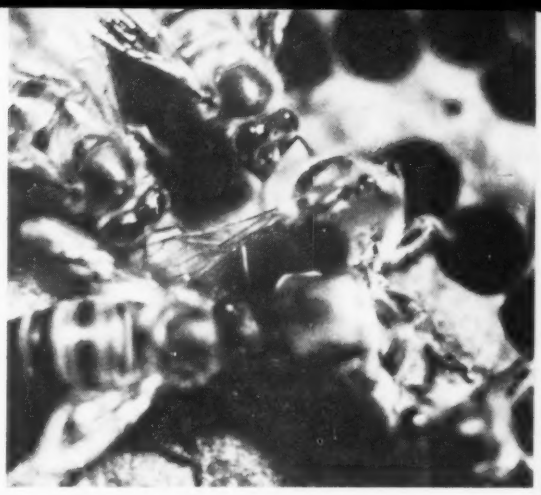
The two queens were finally coaxed together and the fight was on.

It was obvious from the start that the virgin queen was more than a match for her adversary. With a couple of deft body movements, the young queen was able to get on top of the older lady and insert her sting in a position just below the thorax in the soft upper part of the abdomen. The fight did not last longer than two minutes at the most and as the old queen slowly drew herself up in a contorted, paralysed position, a number of her attendants thronged around her unaware that she was no longer their queen. During the fight, not one of these worker bees so much as realized that anything was amiss and the fight was allowed to take its course.

The new queen in the meantime, had moved away from the scene of the fight and lay flat on her stomach completely exhausted from her efforts. Her sting

could at first be clearly seen as she lay quite still except for her panting, then slowly it was withdrawn and finally disappeared. After about half a minute's rest, she was again on her feet, only this time more frantic than ever to seek out any further adversaries. She ran all over the surface of the comb, during which time she would stop for a fraction of a second to let out a plaintive piping noise, then on again. Only once did she return to the now dead queen, just to be certain of her work.

Thereafter, her new sisters proceeded to pay homage to her, at which stage she was secured and returned, together with the comb, to her new home in the nucleus hive.



A number of attendants thronged around her unaware that she was no longer their queen.

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**Medina, Ohio**

Mrs. Blucher and her first hive of bees.

# A Dream Comes True

"Well, O.K.," said my husband, "but just remember, those bees are all yours!"

**MRS. C. M. BLUCHER**
**Woodsboro, Texas**

IT WAS THE middle of April, and we had just moved into our new home. During all the time it took us to complete it, a small thought had kept crowding to the fore. "Now I can finally keep bees." I had wanted to keep them ever since I was 12 years old and a schoolgirl in Illinois. Now, married and with three children, the idea was still there, and much more probable since we now no longer rented, but had our own home. The past landlord had looked thoughtfully at our ducks, chickens and rabbits, but said nothing. I was afraid bees would have been the proverbial straw that broke the camel's back!

"Since we're all moved and everything," I said one bright spring morning, "how about sending off for that beginner's outfit for keeping bees?" (I tried to keep my tone light as if I had just said I had to go to the store for a loaf of bread.)

"Well, O.K.," said my husband, "but just remember, **those bees are all yours!"**

Since we had started so late (for this climate—southern Gulf Coast of Texas,) I decided to tell the bee company to send the beginner's outfit right away and send the bees one week later. I figured that would give me plenty of time to paint the hive and get all equipment assembled and to read up on all available bee information. Now as so many ideas sound good on paper, but end up quite differently, this was no exception. In about a week the hive arrived, as did the other equipment and we went to the post office to collect the mail. There was a card in our box that said we had a package. I got a small sinking feeling as I saw it, and sure enough, the bees had arrived at the same time the hives had. "You're not afraid of them, are you?" the postmaster asked as he handed me the buzzing package.

"No," I said, (rather bravely, I thought.) As I walked out with the package of bees, three rather elderly ladies emitted little squeals and shrank back into the farthest corner from me.

I said in a casual tone, "Well, look what came!" The children were delighted and could hardly wait to get them home for a closer look. My husband rather glumly reminded me again that they were all mine.

Luckily the weather cooperated and was sunny and dry. My husband quickly assembled the frames and hive and I primed the hive, putting on the outside coat of paint the next morning. As I did so, a thought crossed my mind. No gloves had arrived with the other equipment! It was at that point I had several small misgivings about the whole business, but I pushed them to the back of my mind. The children, meanwhile, were spending most of the morning prone on the floor, watching the bees, demanding to see the queen, wanting to know if the bees were too hot, too cold, too crowded, why did they buzz, which end stung, how many there were, if they could have one, and many, many other questions.

I ate very little supper, as I remember, and I also remember that I kept getting up and sprinkling sugar syrup on the screen of the cage. Those were going to be gorged bees, all right, or it wouldn't be my fault! Finally the time came to put the bees in the hive, as it was now about dusk, and those weren't just butterflies in my stomach, but fully grown elephants stamping around. Just as I finished putting on my bee veil, two of my husband's students came over. (He is an Industrial Arts teacher in high school.) Then we went through the how many, do they sting, too hot, too cold routine again with them. By this time it was getting rather dark so **now** was the time to hive the bees. With my husband, and his two students following, and yet poised for flight, I went to the hive, opened it, and took the syrup can from the package of bees. I stood perfectly still for a minute as a few of the bees walked on my hand, but none stung. Since there were so many bees on the wire by which the queen cage was attached, and since I had no gloves, I decided to slip the hive tool under it, and lift the wire. However, as I did so, I accidentally cut the wire and the queen cage fell into the mass of bees still in the cage. (Which was most of them.) Gingerly, I fished around for the end of the wire, expecting to be stung, but again the bees merely walked over my hand. I brushed the bees off the queen cage so we could see the cork to pull out so the bees would eat the candy and release the queen. By this time, it was quite dark and my little old "Remember those are your bees" husband pulled out the cork, but it was the wrong one and several bees flew into the mass in the hive, the queen among them.

Of course, I thought of all the dire warnings I had read about bees balling the queen, and otherwise disposing of her when dumped upon them in so unceremonious a manner. However, I quickly closed the hive, emptied the smoker, which, incidentally, hadn't needed to be used at all.

I impatiently waited about a week and then opened the hive, expecting the worst. This time I used smoke, but still no gloves had arrived, and looked for the queen. There she was, busily laying eggs in one cell after another. The progress the bees had made was astounding to me. Several frames were drawn and some honey had been stored in addition to the eggs and brood. (I had quit feeding the sugar syrup after four days because of the ant problem and also because there was a good mesquite honey flow in progress—late this year because of a cold, rainy spring.)

I opened the hive quite a bit during the following few weeks and then deciding it was time for a super, added one—a shallow with thin comb foundation, since we had decided upon chunk style honey. I waited several days and took a look to see how far the bees had progressed on the super. Much to my surprise and chagrin, only about a dozen or so bees were in the super and the foundation had not been touched. (I had a queen excluder on.) I was quite worried about them swarming for the hive body was "boiling with bees" as one bee book had so aptly phrased it.

As we had previously planned to visit San Antonio, I decided that we could stop at The A. I. Root Company there and see if they could tell me what the matter was and also to pick up some more bee equipment, for the "bee fever" had really taken hold! We talked with Mr. Walter Barth who gave us some advice on what to do and also much other valuable information on the handling of bees. He told us to take off the queen excluder and also to add another hive body and to put three or four frames of uncapped brood into the upper chamber and the foundation where the brood had been, explaining that the honey around the brood often acts as a barrier to the queen if the frames are not switched in this manner. He also said to make all possible haste if the bees were so crowded, though he doubted if they would swarm as they had been started such a comparatively short time ago.

All the way home I was "itchy" about the bees and finally we got home. I rushed into my bee outfit, lit the smoker and hurried to the hive. Again a surprise was in store for me. The bees, in our short visit, had gone into the super, drawn out all the foundation and had six frames filled with honey and had a flying start on the remaining ones! Meanwhile, my husband was once more assembling hive parts and once again I primed and then painted the next morning. I added the hive body the following day, following Mr. Barth's instructions.

Everything went smoothly for the next couple of weeks; the bees worked diligently, in fact so diligently that another shallow super was required. However, the lots next to us were sold and as we had the hive "lapping over" our property into these lots to catch the shade from a bushy mesquite tree, we decided the hive would have to be moved. The owners of the lots assured us that they didn't mind, but we decided to move them anyway. We lost such a few bees that perhaps others might be interested in the manner in which it was done.

**The Hive is Moved about 45 Feet**

We waited until dark and stuffed the entrance with dried grass, after smoking heavily. The entrance, of course, was full size and the grass packed just tightly enough to keep the bees in; not so they would smother. (The hive had a top ventilating hole.) We removed the supers but left the two hive bodies together with the bottom board and loaded them into the children's wagon. We purposely handled them rather roughly and pulled the wagon over rough ground. After we had put the hive on the hive stand and put the supers and covers back on, I pounded on the sides of the brood chamber quite a few times and blew more smoke into the grass at the entrance.

After about ten minutes, I removed a part of the grass to allow some air to circulate, as it was during July. However, I sprinkled long grass lightly over the entrance and alighting board. I also added three shade boards; one for the top and two for the sides the sun would strike during the hot afternoons. The bees were moved about 45 feet. The next morning they were busily engaged in removing the grass and then they went to and from the fields in a most normal manner. I watched off and on all morning to see if they would return to the old spot, but at no time were there more than 50 bees flying around. Most of these seemed to have found their way to the hive by nightfall as there were a very few left at that time.

The bees worked busily all summer, but one more amusing incident happened in September. I was examining a frame of honey to see if enough was capped so I could remove it and decided to check the whole hive. On the center frames in the top chamber were about a dozen queen cells! I gulped and mentally ticked off all information

(Continued on page 122)

# The History of Package Bees

The package bee industry is over 50 years old. During these years many interesting incidents took place before the method of shipping bees was perfected.

**J. M. CUTTS**
**Chipley, Florida**

THE PACKAGE BEE business as we know it is 50 years old. Some bees in combless cages were shipped short distances before that time but in 1911 Mr. W. D. Achord of Fitzpatrick, Alabama shipped the first combless packages from the South to the North. This was the start of a business that has meant much to the beekeeping industry.

The first packages were mostly one pound and one-half pound in size. These early packages used a section of comb honey for feed. This was of course, a perfect food for bees but the combs were fragile and not easily secured as early in the season as packages were shipped. It was therefore necessary to get some kind of food that would be more readily available and would stand the shocks of rough handling in shipping.

Candy, originated by I. R. Good, had been used for years in shipping queens so it was natural that package shippers turned to this as a feed for packages. A small wooden box was nailed to the top of the cage at one end. This was filled with candy and a thin board nailed on top. A hole at the other end of the cage was used to fill the cage with bees.

The first of these had the candy box nailed to the top of the cage, the nails driven through the top into the sides of the box. If the candy was stiff it was very easy to push the box loose in trying to pack the candy into it. Someone conceived the idea of making the candy box just half the size of the cage and nailing it through the end and center posts. This eliminated the box pushing off and made a much stronger cage. See Fig. 1.

Fig. 1.

The slats for the bees to cluster on as shown in this cage were thought to be very essential in the early days. These took different forms, some of them were made of wood, some of screen wire and one shipper in the West even put in a mesquite branch for the bees to cluster on.

Finally some shipper was in too big a hurry in making his cages and failed to put in any kind of clustering device. He found that they worked just as well without them. All the shippers have finally discarded them.

The first shipments were made by express but there were soon some experimental shipments made by parcel post so on June 18, 1918, the Postmaster General issued order No. 1577 covering the shipping of package bees by parcel post. This required that cages be of wood at least ⅜-inch in thickness or of double screen spaced at least ⅜-inch apart. This made the cages more expensive to build and also added to their weight.

About 1918 The A. I. Root Company offered an all wood cage with saw kerfs on all sides and carrying two frames of foundation about ⅓ the size of the standard Hoffman frame. The corners were dovetailed in such a way that it was impossible to place other packages tight against them and shut off the air. It was a very good cage but when the transportation was added it was more expensive than the home made cages that the shippers were using. For this reason it was not widely used. If it had been simplified and mass produced it would have been more popular.

This regulation remained in effect till the late 20's when the shippers convinced the authorities that the single screen was sufficient, and the regulations were relaxed.

The Good candy when properly made was a good food for package bees in cool weather. When shipments were made in warm weather and for long distances it was evident that the bees were suffering and sometimes lost for lack of moisture. Experiments were conducted with water bottles in addition to the candy. The express companies were advised to furnish their messengers with a spray pump so that the bees could be watered when they became restless. Naturally the express men not knowing anything about the nature of bees were inclined to overdo the watering or neglect it altogether and some of them did the spraying at the wrong time.

One fellow reasoned that as the company had furnished him with a spray pump that was used for spraying flies and mosquitoes that they wanted him to use the same insecticide on the package bees. He secured a supply and killed an entire shipment of packages before he learned that this was not the thing to use on package bees.

**Sugar Syrup for Food Enroute**

A can of sugar syrup with small holes in the cover was suspended in the cages. This supplied the needed moisture and was quite an improvement over the candy. For several years shippers soldered a square piece of tin to the bottom of the syrup cans and soldered the covers on. This was expensive and time consuming but it helped to get the bees through alive.

In the late 20's The A. I. Root Company wrote all the shippers and requested that they send them one of their cages and that they would try to combine the best features of all the cages and design a cage. This was the first effort that the writer knows of to standardize the package cages. The best feature that came of this effort was two strips of wood nailed lengthwise on the inside of the corner posts in such position that they would support the can, thus eliminating the necessity of soldering a piece of tin to the bottom of the can to suspend it in the cage. Since the inverted can rested on its top instead of being supported from the bottom it was no longer necessary to solder the lids on.

This worked fine in theory but in actual practice some of these supports broke from the weight of the can of syrup and the rough handling they received. Some enterprising shipper came up with the idea of running these supports crosswise and attaching them to extra posts in the center of the cage. This not only solved the problem of the can supports breaking but made a much stronger cage. See Fig. 2.

Just to show how the customers resist a change when we changed from the piece of tin soldered to the bottom of the cans we received several complaints. One fellow was especially in-

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Fig. 2.

dignant and said that he thought that anyone shipping bees would have sense enough to solder a piece of tin to the bottom of the can so that he could get them out. We could only reply that he had failed to read the instructions which told him to invert the cage and the cans would fall out. This is the cage that is used practically everywhere in the South with more or less variations from one section of the South to another.

It seems that one shipper will start using a certain cage and all those around him will use the same cage. You can travel a couple of hundred miles and find all the shippers in that section using another cage.

In California practically all the shippers use a cage with solid ends and a block of wood nailed to the bottom to support the can, Fig. 3. This has the advantage of being cheaper to build and it evidently works well with their conditions where most of the bees are trucked through but it is not as strong as the cage with the posts in the center. It would be much easier damaged by rough handling.

As long as the package business was small there was little need for a standard package. Since more and more packages are moving by truck it would be a big advantage to have all the packages the same. It is not unusual for a buyer to come down with cages from a half dozen different shippers on one load with all of them just enough different in size so that they will not crate together. Trying to get these crated and loaded so that they will not give trouble enroute is certainly a headache for the shipper who is already overworked at that time of year.

The American Bee Breeders' Association has had a committee studying the standardization of cages for more than a year. They have compared many cages and the matter was discussed at length at the last annual meeting at Hattiesburg, Mississippi. No action was taken but it was decided to continue the study of the matter for another year. It is hoped that they can finally settle on a cage that all the shippers will use and that it will eliminate the dozen or more different size cages that are in use at the present time and that the entire industry will benefit from their efforts.

The syrup cans with the small holes in the lids worked reasonably well for shipments by express and parcel post but when they are shipped by truck the syrup comes out with every jar of the truck and soon it is running out of the truck body and the bees arrive at their destination without food. To eliminate this, many shippers now use a larger hole in the cover and place a thin but closely woven cloth between the cover and the can. This cloth stays moist so that the bees can take the syrup as they need it and it does not waste out with the jolting of the truck. It costs a little more to ship this way but those who have tried it find that it is well worth the extra cost.

Neither the large nor small holes work on shipments by air. When the plane ascends the pressure in the cans

(Continued on page 121)

Fig. 3.

# Blood Transfusion For Colonies

**ROBERT J. WYNDHAM**
**Upland, Calif.**

COMMERCIAL AND experienced apiarists know all about it, but small scale beekeepers may not be acquainted with the advantages of equalizing. Then, how, when and why do we equalize?

First of all we should know that there are four goals we try to attain by equalizing: 1. To prevent colonies from starving when they may run out of winter stores; 2. To have our colonies as much as possible of equal strength at the start of the honey flow; 3. To help swarm prevention; 4. To put all the available equipment to its best use during the honey flow.

Of course, timing of the operations will vary according to location. Here in the Southwest, where the honey crop is brought in during a short time span, equalizing is very important. However, it is the writer's opinion that it can be applied to advantage anywhere.

Toward early spring some colonies may run low on winter stores. This is serious, for come spring the queen would then not be laying at full capacity. Then when the honey flow starts, these colonies would be short of field bees. On the other hand, some colonies in early spring may have more honey left than they will need. So the logical thing to do is to take some honey from the rich and give it to the poor.

Equalizing the population strength is started early in spring before brood production reaches its peak. As a preliminary step, it is a good idea to check the condition of the queens of the weaker colonies. Wherever you find an old queen—look for worn wings and/or a poor brood pattern—kill her and unite the colony with a strong one, unless, of course, you can obtain young queens for requeening 60 days before the main flow starts. Then, shortly before the breeding is at its peak, mark the colonies that run well ahead of the average strength. These should have six or more combs of brood. From each you take away one comb of sealed brood. You transfer it with the adhering bees to a colony of less than average strength, but not to a very weak one. Of course, you check that the queen is not on that comb. After you shake off the bees in front of the weaker hive, you place the comb in the brood nest. The field bees you shook off will rejoin their colony, while the nurse bees will be adopted by their hosts. The empty comb removed from the weaker colony, after shaking the bees back into the hive, you put next to the brood nest of the strong colony. If the circumstances are favorable, this procedure can be repeated.

This manipulation has two advantages: the strongest colonies are most likely to swarm and by this bloodletting the urge to swarm is weakened, also more room for extension of the brood nest is provided. On the other hand, weaker colonies are bound to produce poor crops. So reinforcing them with brood, soon to hatch, and nurse bees, gives them a shot in the arm.

Then there is a different kind of equalizing, namely during the honey flow. Invariably some colonies are very productive, while others lag far behind. Even if you super a little ahead of need—a good practice—the bees may still feel crowded and make plans for swarming. Once they are in the swarming mood, it is hard to make them change their mind. So you take combs of capped honey away from the front runners and transfer them to the laggards. In this case it is better to shake the bees back into the hives where they belong. You replace the combs of honey with empty combs taken from the lagging colonies. Or you replace them with sheets of foun-

dation: as long as bees are building, they don't feel the urge to swarm. In this way you can put all your combs to work or have new combs drawn out, as desired.

**A word of caution:** if there is any suspicion that foulbrood may be present among your bees, refrain from equalizing. It would spread the disease and might turn into disaster.

# What To Do When Your Queens Arrive

**ROY S. WEAVER**
**Navasota, Texas**

OVER THE YEARS we have talked with, and corresponded with, many beekeepers. We believe that many fine queens are damaged or are completely lost AFTER they are received. This loss is not confined to the smaller beekeepers with little experience but is also sustained by large commercial producers.

It is very easy to hold queens in tiptop condition for days. All it takes is a little trouble and knowing what to do.

First, when your queens arrive, open the package and lay the cages out screens up. Give each cage of bees a small amount of water and if they are not going to be used right away store them in a cool dark place. This is especially important during the hot dry summer. Sometime you may receive a shipment of queens, or even several shipments, and because of weather conditions or some other factor you know it will be several days before you can use them.

If you remove all the worker bees from the cages, go to one of your good colonies, move two frames of young brood above a queen excluder. It is better to move up two combs of HATCHING brood and two combs of young brood if the colony is strong enough. Be sure there is no queen of any kind above the excluder. If you have a good many queens to store, fix a frame in such a way as to hold two racks. These racks should hold 20 odd queens with the cages placed two together (with their backs together) and in such a way as to allow the bees in the colony to get to the screen wire over the cage but without getting to the candy end of the cage. Place this frame with your queen between two frames of open brood above the queen excluder. You will find that within a couple of days these queens will look like they are ready to lay, and in fact they are.

When you are ready to use these queens, set the racks with queens in a hive body with a frame or two of brood and bees and carry along to the bee yards with you. Remove the queens from the care of the bees only as you need them.

If you will build up a reserve of queens in this way you will have queens when you need them even if your supplier is unable to make shipments on the exact date booked.

If your queens fail to arrive on the exact date booked do not be too quick to condem your queen breeder. You may be sure that if you have your order booked with a reliable party that this man will be doing his best. He realizes if he is going to stay in the business he must give satisfaction.

In the South it often happens that there may be several days when queens cannot mate. The breeder can do nothing about this. Also the breeder has no way of knowing WHEN this may happen. At the present price of queens a successful breeder cannot afford to hold young laying queens in the mating nucs for many days, waiting until your shipping date arrives. Good queen breeders do not KNOWINGLY over-book. They do have to book near capacity, and now and then because of more bad weather than normal, shipments are delayed.

# More About Ball Clover

I am writing this article because of the many inquiries I'm receiving since my article on Ball Clover was published in the November '60 Gleanings. Most of these articles pertain to this clover as a grazing plant.

**GAYDEN PERKINS**
**St. Francisville, Louisiana**

AS STATED in the first article, my knowledge of this new plant (new in the U.S.) has been acquired by observing it locally and discussing it with a Plant Material Technician of the S.C.S. These technicians are the ones who tested the merits of Ball Clover and then encouraged its use as a conservation plant in this locality.

This area of Louisiana has moved, in late years, from row crops to cattle farming. The establishment of improved pastures consisting of legumes and grasses is encouraged by all the agricultural agencies. This is usually accomplished by liming, fertilizing, and planting re-seeding legumes in the early fall. Bermuda grass usually follows (or is planted) in the spring. The most commonly planted legumes are improved varieties of White Clover, Crimson Clover, and Singletary Peas*. The improved varieties of White Clover are recommended for the alluvial soils and the deeper upland soils.

Crimson Clover does well on the upland soils having good internal drainage. It will not succeed on soils having poor internal drainage, or on bottom land. Ball Clover will succeed on a wider range of soils than either of the above clovers, and I am of the opinion that it will furnish forage equal with White on the thinner hill land (on some soils more than White).** Livestock seem to relish all three of these clovers equally, and in all fairness, I must say each furnish a bloat problem when allowed to get rank in the spring.

Crimson Clover usually furnishes the earliest grazing of these three clovers. It is also the first to die out in the spring—along in May. Ball Clover lasts about two weeks longer than Crimson. White Clover (improved varieties) lasts longer than any cool season grazing plant we use. It continues growing in relationship to the amount of moisture in the soil. However, our upland soils dry out so rapidly when hot weather arrives, White Clovers cannot be expected to furnish grazing over two or three weeks longer than Ball Clover.

In our alluvial soils, improved varieties of White Clover frequently live through the summer. It would be hard to find a plant to beat White Clover (improved varieties) in these fertile soils.

Ball Clover is a proficient re-seeder, having re-seeded for ten years, I'm told by the technicians. The 15-acre field mentioned in my first article, on which 4500 pounds of seed was obtained, volunteered to a solid stand on November 1, 1960. Mr. Percy was grazing it on December 1, 1960. Another plot planted the first week in October, 1960, was being grazed on the first day of November. We have had an unusually warm fall, I must add. Ball Clover is self-fertile, but like Crimson Clover, pollinators increase seed yield.

Ball Clover is not being planted here except in small acreages. This is due chiefly to the lack of Federal cost-sharing under the A.S.C. programs here in Louisiana. Alabama has included it under the A.S.C. program, I'm told, and larger acreages are being planted.

(Continued on page 123)

* Singletary Peas seem to have no value as Bee Pasturage. White and Crimson Clovers are worked heavily by honeybees.

** Ball Clover will grow on some thin, deep sandy soils where neither White nor Crimson will grow.

**Bee Par**
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# Research Review

**DR. ROGER A. MORSE**
**Research Editor of Gleanings and Ass't. Prof. of Apiculture**
**Cornell University, Ithaca, N. Y.**

## Bee Paralysis Resulting from Pollen in Australia:

A REPORT FROM Australia indicates that pollen from some of the native plants in that area causes a type of bee paralysis. At least five plants produce pollen which will bring about this paralysis.

The symptoms are very similar to those shown by **Nosema** and the colonies dwindle much as do colonies affected by **Nosema.** The situation is complicated by the fact that **Nosema** was found to increase after the disease developed.

Two of the plants involved are **Eucalyptus** species which are native to Australia. The flora found in Australia is quite different than that found anywhere else in the world. It may very well be that this type of paralysis does not exist in the United States but where paralysis is a problem this might well be investigated.

Doull, Keith M.
Pollen induced paralysis of Australia honeybees. The Australiasian Beekeeper. 62: 103-4. 1960.

## The Solar Wax Extractor:

A REPORT ON the solar wax extractor by Prof. Anderson of Pennsylvania gives several pointers to persons interested in making one.

The unit should be painted black outside and white inside. The pan (galvanized) should be insulated and two panes of glass with an air space between should be used on top. Other points include sloping the recommended five inch side walls and having glass which reaches to the sides of the pan.

Temperatures as high as 215°F. were recorded inside the extractor. Since prolonged heating above 160°F. will damage honey frequent removal of the honey which is salvaged is recommended.

The report listed below and which is available from Pennsylvania State College (University Park, Pennsylvania) includes pictures and illustrations.

Anderson, E. J.
An improved solar wax extractor. Progress Report 225. 5 pages. 1960.

## Laboratory Tests on DDT Toxicity:

EXPERIMENTS PERFORMED in Poland show that DDT is more toxic to bees at low temperatures than at high temperatures. The investigator states, "The toxicity decreased about four times with each 10°C. (18°F.) temperature increase."

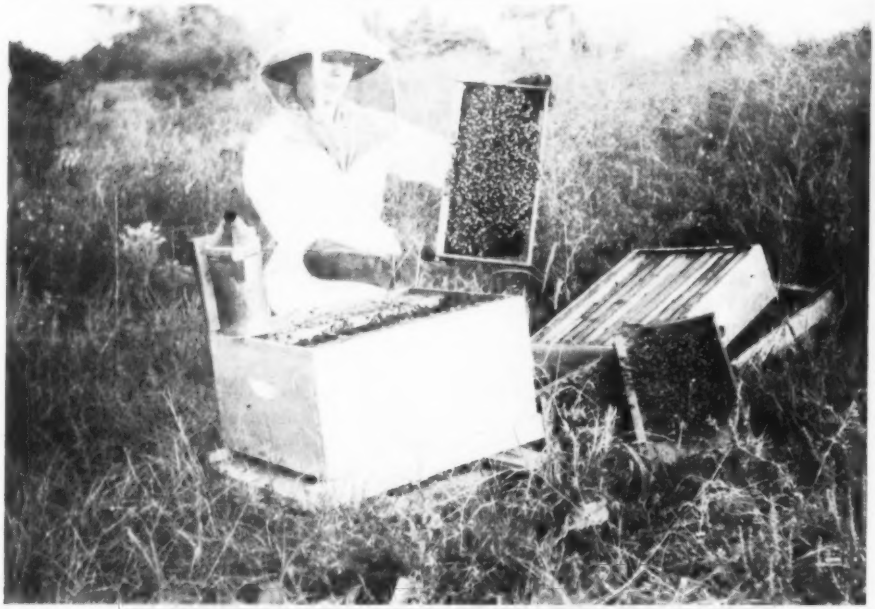
Smolarz S., Leski R.
Effect of temperature on the toxicity of DDT to the honeybee. Pszczelnicze Zeszyty Naukowe 4: 1. 1960.

## Coffee Pollination:

EXPERIMENTS IN Brazil showed with one coffee variety that 61.7 percent of the coffee blossoms protected against insect visits (and therefore not pollinated by bees) by muslin cloth set fruit. In the case of the blossoms which were not covered and which were visited by honeybees 75.3 percent set fruit.

Amaral, Erico.
Influence of insects on pollination of Caturra coffee. Revista de Agricultura 35: 139-147. 1960.

# NEWS REEL



Monicca McNutt, 1960 National Honey Queen, proves she is not only a queen in every sense of the word, but also knows what the inside of a beehive looks like.

Announcing the 1961 officers of the Middlesex County Beekeepers' Association (Mass.). Left to right, front row: H. G. Neunzer, delegate; John H. Furber, president; Asa Olsen, vice president; Sam Dickson, treasurer. Back row: Betty Carlson, corresponding secretary; Walter Carlson, recording secretary and Chester McInnis, delegate.

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When a hurricane threatens it becomes a necessity to anchor down equipment. This is the apiary of Mr. and Mrs. Henry Knight of Alfred, Maine, tied and weighted down, prior to hurricane "Donna" which swept the east coast last summer. Word was received that the bees made it through without any losses.

General Gavin, U.S. Army, Munich area, visits honey display at U.S.D.A. exhibit. Center-Millard Coggshall, U.S. honey industry representative. Right-Marvin Webster, U.S.D.A. honey representative.—Photo courtesy USDA.

# Editorials

## Adverse Publicity Attacks Once More

IN AN EDITORIAL in the October issue we called attention to a rash of adverse publicity for bees and honey. The underlying theme of all these newspaper and magazine accounts indicates that the public will be harmed either by bees such as in the case of the "Stinging Publicity" or that they will receive some injury from eating the product of the bee, namely honey.

The latest form of unfortunate publicity emanates from a national press release filed December 16, 1960. It quotes King "an official" of the Ohio Agricultural Experiment Station as proving by experiments that bees carry a broad leaf weed killer over into honey. It calls attention to the fact that this material also caused the cranberry episode. It cites also a professor of Purdue University as saying "that the Ohio Agricultural Station's experiment could result in a change in the diets of health food addicts and that it could alter the nation's honey eating habits".

The reporting was in error according to the facts as we find them. Charles King is a graduate student carrying on some basic experiments on herbicides at the Ohio Agricultural Experiment Station. The particular portion of the experiment reported at the Milwaukee Meetings had no relation to bees or honey. The experiment did, however, involve this simple procedure. A radioactive isotope, Carbon 14, was added to 2,4-D and amitrol, which are herbicidal chemicals. Some of this was placed on the leaf of a plant and later the nectar was tested and a trace of the isotope found.

Mr. King was the first to say that to draw these other conclusions is both unscientific and unfair. The facts are that amitrol has been approved for use only on corn (10 to 14 days before planting) and on cranberries (7 to 10 days after harvest). This chemical is not used on a commercial scale on nectar producing plants which are commonly visited by bees. Therefore, Mr. King is confident that there is definitely no hazard to the consumer of honey as far as amitrol is concerned. On the other hand, 2,4-D is used extensively to control roadside weeds which may include red clover, alsike, and alfalfa, but 2,4-D has never been implicated as a carcinogen (a cancer producing chemical) or as a toxicant in any way to warm-blooded animals except in extremely massive doses. With these facts in mind it is impossible to conceive that honey contains harmful amounts of any herbicide.

Also, as far as we can determine, the words of Dr. Roger of Purdue University were twisted in a similar manner. Perhaps we shouldn't be so thin-skinned but when we see these garbled articles appear in newspapers and on radio on a national scale, it makes one feel as if the truth should be told, at least to the beekeeping industry so that frightened honey eaters may be given the facts.

As an industry we do face some problems to keep honey free of contaminating chemicals. Let's attack these stories and solve them as quickly as possible but at the same time keep a wary eye for false publicity based on scrambled facts and bad reporting by the press.

## Package Bees and Queens Essential to Our Industry

SOME YEARS AGO, 1918 to be exact, the editor was keeping bees commercially in the raspberry region of northern Michigan. Bees were wintered in a cellar and during early April were being removed from the cellar to their summer stands. As is usually the case, there were a few weak colonies and it was a problem to know just what to do with them. It would have been like robbing Peter to pay Paul to have taken bees and brood from strong colonies to strengthen weak ones.

What each of the weak colonies needed was a queenless package of bees from the South. At that time the shipping of combless packages was not common. In fact, if you look through the advertising columns of the bee journals for March, April, and May, 1918, you will find comparatively few shippers of packages. Some were offering one pound packages of bees with queens. It was not until the early '20's that the shipping of combless packages became general.

Queen breeders of the South were advertising early queens and some were offering bees in small nuclei, consisting of combs of brood with adhering bees.

In 1922 Canada barred bees on combs, consequently it was necessary for the Canadians to order combless packages in order to strengthen weak colonies and start new colonies of bees.

Some of the shippers at that time used bee candy instead of sugar syrup for food enroute. The candy was placed in a small receptacle at the top of the shipping cage where the bees could reach it conveniently. Candy for bees enroute did not work out well. In some instances, it became soft and this resulted in bees becoming stuck up.

Finally, someone conceived the idea of puncturing the lid of a two and one-half pound friction top honey can, to be used with a feeder. At first a single hole in the cover was made large enough for a wick to go through it. This was fairly satisfactory but it it was soon abandoned because too much syrup leaked out of this single opening.

When it was found that the friction top can with two or three small holes in the lid was satisfactory, the bee shipping business went ahead by leaps and bounds. At one time, a few years ago, close to a million pounds of bees were shipped from South to North in a single season and about the same number of queens.

The southern queen and bee shipping business has made a marvelous contribution to the beekeeping industry during the years. It has been possible for beekeepers in the far North, where wintering is practically impossible, to start with packages early in the spring and have them develop into colonies that would store a good crop of honey the same season. Queen bees are needed in the spring to replace old worn out queens and there is no place other than the South to secure the needed queens.

This coming season when some of us in the North receive nice clean shipments of package bees from the South, we should pause to consider the amount of labor and skill involved in producing and shipping package bees and queens.

## Prospects Favorable for the Coming Season

REPORTS FROM OVER the country seem to indicate that colonies of bees in most areas went into winter quarters in good condition, with ample stores. A good fall honey flow in most of the northeast states helped to put bees in favorable condition for winter.

The first snow hit the East in early December. Moisture in most sections of the country has been ample, except in some parts of the West.

The demand for honey appears to be holding up quite well. As a matter of fact, according to a recent issue of Honey Marketing News put out by U. S. Department of Agriculture, some states, at least six, report that most large lots of honey have been sold and some reporters say it is doubtful if there will be enough honey in their states to last until this year's crop is harvested. Honey prices appear to be holding firm or strengthening in some areas.

In view of present conditions it would appear that beekeepers should bend their efforts to produce the maximum honey crop this coming season. Some may wish to increase their holdings in bees and equipment.

# *Live and Learn*

**PROPOLIS PETE**

FEBRUARY AGAIN. Even though it may be bitter cold outside, there are signs of promise for the new season. The sun is higher, and after a storm, melts the snow on the roof to let it run down and form icicles in the shadows. If you don't think that there has been progress, look in your almanac, and be surprised to find that sunset comes about the same as early October.

The bees know it too. Around here, flight days begin to show up, and they take advantage of the warm sun on the front of the hive to get rid of whatever is bothering them. Once in a while we will find a bee on the back porch, where it is sunny. In front of the hives, especially when there still is snow on the ground, you will find many bees who miscalculated the temperature. The number will dismay you, and you wonder how long a colony can survive if it is losing population at that rate.

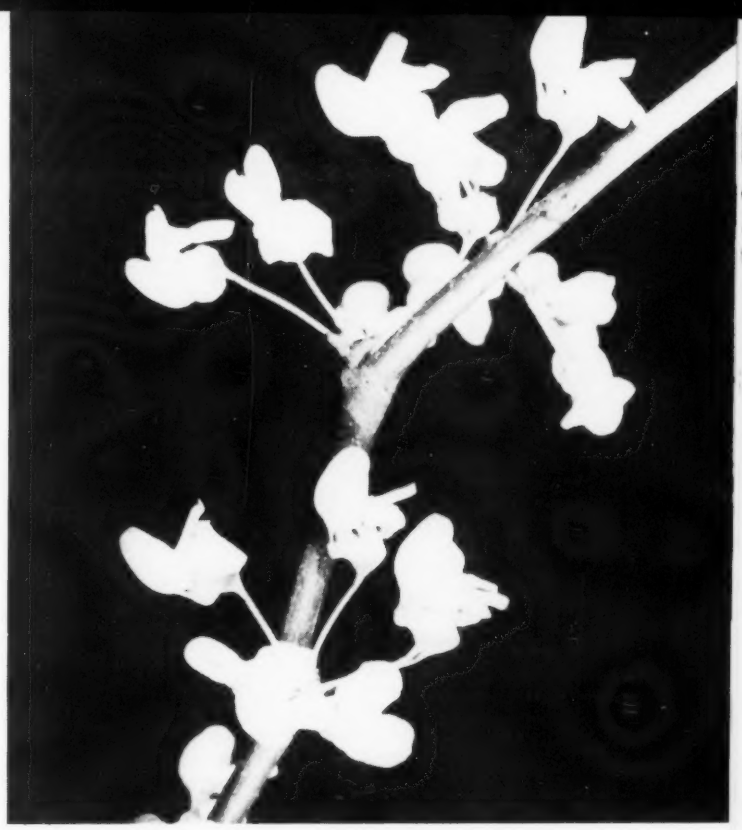
I have never opened a hive at this time of the year to inspect the brood combs, but people who have done so tell me that frequently they will find that the queen has started to lay. Not much, but apparently for testing purposes, so that she can get in practice for the heavy demands that will be made upon her in the very near future. When the pressure to lay begins to build up, that is the time to watch the honey supply.

Up to now, an average colony may have used maybe ten pounds of honey, and a beginner will feel satisfied that there is plenty more for the rest of the winter. That would be true if all the stores had to do was to keep the adult bees alive. But the fact is that the stores have to do more than just keep the adult bees alive. They are the means of building up a population that will be in a position to get out and gather nectar for your surplus honey, and to gather pollen to feed the young that are to carry on the work of the colony. As the winter weather tapers off into spring, the queen steps up her egg laying, and, if you were to look into a colony say around the middle of March, you may find up to six or more frames pretty well filled out with brood in all stages. Those young bees didn't get that way on air. They were nourished and grew on food supplied from the apparently lavish stores, and if the weather permitted you to take the hive apart, you would find that the stores that seemed so plentiful have evaporated.

If you have any colonies that just possibly could be running short, the sensible thing to do is to take off the top cover and spread a couple pounds of dry sugar on the inner cover. Move the closure over the hole in the inner cover just enough to let two or three bees pass through, and if the bees take down the sugar you know that they need it. Don't remove the hole closer entirely. You will lose too much heat from the cluster. If the bees don't take down the sugar it is a sign that they don't need it, but it may also be a sign that the cluster is so weak that they can't break it up long enough to take nourishment. Any sugar that the bees have not taken after there is bloom available for them is not wasted. Just scrape it into the syrup kettle, and feed any weaklings or new packages in the regular way.

There is another thing that you can do in February, if you haven't done it already. That is to order package bees if you are going to need them. By ordering now, you stand a better chance of getting them when you want them. Also, the breeder gets a break, because when he knows what he needs, he is better able to give you the kind of service, and I think the quality of the stock, that you want. Breeding bees and queens is not like running a doughnut machine. You can't speed it up when the rush is on, and slow it down when the rush is over.

And, while it has nothing to do with February, that applies to the honey flow too. You can't get surplus unless you have the bees to go get it for you. Maybe it does have something to do with February at that, because what you do this month very easily could have a good or bad effect on how you do in June.



Redbud
(Cercis canadensis)

# Let's Talk About HONEY PLANTS

**DR. HARVEY B. LOVELL, University of Louisville, Louisville, Kentucky**

REDBUD (**Cercis canadensis**), are shrubs or small trees up to 50 feet high and one foot in diameter. They occur from northern Florida and Texas north to Connecticut and southern Wisconsin. Redbud is often planted for ornamental reasons. The pea-shaped flowers are pink to reddish, often quite variable in hue. The large leaves are heart-shaped and five-veined from the base. This shrub starts blooming in February in the deep south to April and even May farther north. Once I left Louisville the last week of February and drove through a snow storm in the southern Allegheny's in the night, but in the morning we found redbud in bloom in southern Georgia and Florida. It blooms before the bees have become strong enough to produce a surplus. Therefore it is chiefly valuable for brood rearing. Bees visit the numerous flowers for both pollen and nectar.

**Oklahoma.** Claude Brixler of Hydro wrote me that redbud is a minor honey plant, blooming April 1 to 10, and the bees work it well when it is warm enough.

**Mississippi.** According to William M. Wicht of Hattiesburg, bees work redbud so eagerly some springs that they store a deep super of reddish honey with a good flavor.

**Alabama.** A. I. Forehand, who was named after A. I. Root by his father, a famous beekeeper, told me that at

Fort Deposit his bees often stored honey during redbud bloom; usually the honey is all used in brood rearing.

**Kentucky.** Joe Morris of Raccoon, wrote that redbud blooms from April to May 15, that the color of the honey is red and the flavor delicious. He once made a 50-pound surplus per hive. He adds "on account of cold weather, some springs the early bloom freezes and redbud fails to produce."

Another species, the western redbud, occurs in **California.** Vansell wrote "a small tree widely distributed up to 4,000 feet in the mountains, it blooms almost too early for best results for honey, but is visited freely on warm days by the honeybee for pollen and nectar."

**Texas.** The Texas redbud (**Cercis reniformis**) is reported as valuable in the southwest.

Redbud is one of our most beautiful spring shrubs. Whole hillsides become pink with the bloom on warm spring days. It usually continues in bloom from three weeks to a month because the cool spring weather usually holds it back and extends the period of bloom.

**Goldenrod. (Solidago).** Dr. William T. Wilson in **Colorado Bee Notes** writes that honeybees visit a wide variety of fall flowers, many with dark, strong honey. This late supply of nectar makes excellent food for the bees provided it does not come from honey dew.

"**Solidago canadensis** appears in Colorado in August and September. Honeybees are usually found probing in the brilliant yellow flowers for nectar. In general goldenrod can be considered a minor source of pollen but as a supplier of nectar it accounts for itself very well and the fragrant plumes of blossoms readily attract the visit of bees."

**Florida.** I received a pressed plant from Al Perkis of Dade City. He writes "It was about 6 feet high and I saw one 10 feet with a woody trunk as large as my thumb. All kinds of bees and bugs working this frantically." The composite clusters are white and look a little like goldenrod heads. The leaves are thick, with several teeth at their ends. It is sea myrtle, **Baccharis halimifolia**, an identification confirmed by Mrs. Barbara Moore, of the Agricultural Experiment Station at Gainesville, Florida.

Sea myrtle grows along the Atlantic coast from Massachusetts to Florida and along the Gulf coast to Texas. It is most common in the south, where it blooms in October and November and gives the bees a fall stimulation for brood rearing. I can find no description of the honey.

## *A Book Review*

# "Here Come The Bees"

ANOTHER BEE BOOK for children makes its appearance, this by Alice E. Goudey, author of such books as, "Here Come the Bears", "Here Come the Beavers", and many others.

"Here Come the Bees" is brightly written in language children can understand, but with an entire absence of "baby talk" that most children of school age resent.

The text is profusely illustrated with many accurate drawings by Garry MacKenzie, accurate enough to be approved by professionals yet easily understood by children.

The following from page 86 is typical of the style: "When spring comes, the busy life of the hive will start over again. The queen will lay thousands of eggs. The nurse bees will take care of the hungry larvae. The wax makers will again build the small waxen cells. And the workers will take off from the little porch like small airplanes and return with their loads of pollen and nectar."

Beekeepers everywhere should see that elementary schools in their community have a copy of this book.

Published in New York, by Chas. Scribner's Sons, 1960. Price $2.50.



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**Hurry-Up**

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Hurry-Up Honey Coffee Cake.—Photo courtesy Kellogg Co.

# *In A Hurry*

**MRS. BENJ. NIELSEN**
**Aurora, Nebraska**

HURRY, HURRY, speed, more speed —seems that is the way we have become accustomed to live! It has even affected our cooking. Some of these shortcuts produce delightful results for the effort expended. And when they can be linked up with honey, Nature's golden sweet, some of them become downright delicious. Some of the best of these I have chosen for this month.

**Hurry-Up Honey Coffeecake**

One package refrigerated biscuits, 2 cups cornflakes or ½ cup packaged cornflake crumbs, ½ teaspoon cinnamon, 3 tablespoons honey and 2 tablespoons butter, melted.

Separate biscuits. If using cornflakes, crush into fine crumbs. Combine cornflake crumbs and cinnamon. Blend honey and butter. Dip biscuits in honey-butter mixture, then into crumb mixture. Overlap biscuits in greased 3-cup ring mold. Bake in moderately hot oven, 400°F. about 20 minutes. Turn out onto warm serving plate and serve immediately. Yield: 1 coffee cake, 4-5 servings.

**Quickie Honey Pecan Rolls**

One-third cup butter, melted, ¼ cup brown sugar, ¼ cup honey and ½ cup pecan halves.

Pour honey mixture in baking pan or spoon into muffin tins using two or three nut halves in each cup. Separate refrigerated rolls and top honey mixture. Bake. Immediately turn upside down on large tray. Let pan stay over rolls a minute so honey butter-scotch runs down over them.

**Honey Fluff**

One-fourth cup honey, 1 teaspoon cinnamon, ¼ teaspoon cloves, few grains salt and 1 cup whipping cream.

Combine honey, cinnamon, cloves and salt. Whip cream until stiff; gradually add honey mixture. Delicious on cake, gingerbread or cup cakes. If desired omit spices and use 1 teaspoon vanilla or maple flavoring.

Number four in a series of ten articles on the different honeys of America.

Analytical data are transferred to IBM cards by Judy Lorenson, prior to computation.—Photo by M. C. Audsley, USDA.

# A Survey of American Honeys

## 4. Effect of Crop Year on Composition [1/]

**JONATHAN W. WHITE, JR.**
**Eastern Regional Research Laboratory**
Eastern Utilization Research and Development Division
**Agricultural Research Service, United States Department of Agriculture**
**Philadelphia 18, Pennsylvania**

IN THE COLLECTION of honey samples from over the United States for this project, honey was collected from the two crop years, 1956 and 1957. This was done because insufficient samples had been obtained from one year to fill our requirements, and

1 This is one in a series of articles describing a large-scale study of the composition of honeys from over the United States. Complete data interpretation and conclusions will appear in a forthcoming Department of Agriculture publication.

also because we hoped that information might be obtained that would throw some light on the amount of variation in honey attributable to the effect of the crop year. We realize that collection for only two years is quite insufficient to provide definitive information about this factor, but we were limited as to the number of samples we could handle, so were obliged to consider only the two years.

**Average Composition for the Two Years**

In the first article in this series the average analysis was given for all honey samples analyzed. Here we present the average analyses of all 1956 honey samples and of all 1957 honey samples. Table 1 shows the values. It can be seen that the average 1957 honey was somewhat lighter in color, slightly lower in granulation tendency, slightly higher in levulose, lower in undetermined material, and otherwise quite similar to the 1956 honey. These two averages are not made up of corresponding samples, however, and their

Table 1. Average Composition of Honey Samples for Two Crop Years

| | 1956 | 1957 |
|---|---|---|
| No. of samples | 182 | 297 |
| Color | Light part of Extra Light Amber | Dark part of White |
| Granulation Tendency | 1/2" layer of crystals | 1/8-1/4" layer of crystals |
| Moisture (%) | 17.0 | 17.3 |
| Levulose (%) | 37.92 | 38.36 |
| Dextrose (%) | 31.15 | 31.37 |
| Sucrose (%) | 1.32 | 1.31 |
| Maltose (%) | 7.44 | 7.22 |
| Higher Sugars (%) | 1.69 | 1.38 |
| Undetermined (%) | 3.4 | 2.9 |
| pH | 3.96 | 3.88 |
| Free Acidity (meq./kg.) | 22.16 | 21.95 |
| Lactone (meq./kg.) | 7.05 | 7.15 |
| Total Acid (meq./kg.) | 29.21 | 29.10 |
| Lactone/Free Acid | 0.336 | 0.334 |
| Ash (%) | 0.173 | 0.166 |
| Nitrogen (%) | 0.041 | 0.041 |

values depend on the sample response from producers for the two years.

### Comparison of Legume Honey Averages

There are two other ways that our data can be studied to produce information on the general question of effect of crop year on composition of honey. One is by comparison of average values for the same floral types for the two years. The other is by comparison of samples from the same producer and from the same type and area for the two years.

There were seven important floral types and blends (110 samples) for which we had enough samples to allow averaging of values for each crop year. When this was done, it was seen that in practically all cases where there was a difference in the averages for the two years, it was no greater than the variation normally encountered between samples of that type of honey for one year. Statistical tests were applied and only in the case of granulation tendency were any significant differences found between the two years. Here the 1957 honey granulated less.

### Comparison of Matching Individual Samples

For the final type of comparison of one year's honey with another, we had 22 samples, one from each year, from the same producer and location for 11 floral types. This kind of comparison should reflect actual differences in the "same" honey over the two years, since the samples are matching. This was not the case in the first two types of comparison.

The comparison of these samples is given in Table 2. Here a plus sign means that the 1957 sample was appreciably higher than the 1956 sample in that characteristic, a minus means the opposite, and no mark means that there was no difference. The last line of the table, "Total" gives the number of samples in which differences were found between 1956 and 1957 samples for that attribute. Here the size of the differences is about that amount that could be reliably detected using our

Table 2. Comparison of 1957 Samples with 1956 Samples, each from Same Producer, Location and Floral Type

| | Color | Granulation | Moisture | Age | Levulose | Dextrose | Sucrose | Maltose | Higher Sugars | Undetermined | pH | Free Acid | Lactone | Total Acid | Lactone/Free Acid | Ash | Nitrogen |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alfalfa-sweet clover | - | | + | + | | - | - | + | + | | - | | - | | - | | - |
| Aster | | | + | - | | - | | | | | - | + | + | + | + | | + |
| Blend | - | | - | - | + | + | - | | + | | | | | | + | + | |
| Chinquapin | | + | + | | + | + | | | - | - | - | + | + | + | + | | + |
| Clover, white | - | - | + | | - | - | | + | | | - | | | | | - | |
| Coralvine | | | + | | | - | | | | | | | | | | | + |
| Cotton | | | | | - | | - | | | | | | | | | + | + |
| Gallberry | + | | + | - | - | + | | - | - | - | - | + | + | + | + | + | |
| Privet | - | | | | | + | + | + | | - | - | - | - | - | | - | |
| Raspberry | | | | - | - | - | - | - | + | + | + | + | - | + | - | + | + |
| Vetch | | - | - | | - | - | + | + | + | | | | | | | + | |
| TOTAL | 5 | 3 | 8 | 5 | 7 | 10 | 6 | 6 | 6 | 4 | 7 | 5 | 6 | 5 | 6 | 7 | 6 |

analytical methods. Many of them have little actual effect on properties and uses of the honey. Thus, dextrose content is the most variable property in these samples, with 10 of 11 samples showing differences from year to year. These differences were generally small however, since only three samples had appreciable differences in granulating tendency. As might be expected, moisture content showed a high degree of variation. The 1957 samples were generally higher in moisture than those from 1956. The variability of other factors may be seen in the table.

In presenting and discussing these results, we do not mean to suggest that there is at this late date any practical interest in honey from the 1956 and 1957 crops as such. Rather these data and discussions are meant to give a general idea of how much variation can be expected from this source.

The complete individual analytical values and a more complete discussion of all the factors here described is planned to be published as a U.S. Department of Agriculture Technical Bulletin.

Next month: - Effect of area of production on composition.

The cards bearing the analytical results are machine sorted by Dr. White during the analysis of the data.—Photo by M. C. Audsley, USDA.

# *Observations In Europe*

Dr. Milum takes you along on a visit with European beekeepers.

**DR. V. G. MILUM** 1/
**Urbana, Illinois**

DURING THE PAST year it was the author's pleasure and privilege to visit several foreign countries and some beekeeping institutions in conjunction with our attendance at The Fourth International Pollination Conference at Copenhagen, August 12-14 and The 11th International Entomological Congress, at Vienna, August 18-25. Although the month of August is "holiday" time for most professional apiculturists, we did manage to find some of them at home. Our first visit was to Bonn where we were graciously entertained by Professor (Dr.) Goetze and his good wife, who serves as his secretary and translator. The grounds at this institute were beautiful with the gardens exhibiting most of the German honey flora, some arranged and planted in separate areas to represent the different types of beekeeping areas as to floral fauna. Dr. Goetze's research is largely concerned with measurement of body structures as related to honey gathering abilities, while using artificial insemination as a breeding tool. A graduate student, Friedrich Dietz, is studying the ecology of nectar secretion using plants growing in nutrient solutions.

Here as well as at other institutes visited, the organization was blessed with what we would consider an abundance of staff and assistance particularly with apiary manipulations for nearly always there was someone carrying the title of "head beekeeper" or "master beekeeper."

At Bonn we were also given the privilege of visiting a commercial "master beekeeper" (by diploma), Mr Eberhardt, who operated about 200 colonies. On the occasion of our visit, most of the colonies had been taken to the mountains for the honey flow. Otherwise, 119 of them would have been housed in a bee house consisting of two arms extending about 60 feet from the head house at a 130° angle. Inside, the colonies were arranged in two levels with room for additional packing on the sides of the colonies. A hall or passageway along the rear of the hives provided access for examination. Other than a small truck garden and some rental of guest rooms and proceeds from the sale of bee supplies, the 200 colonies provided a living for Mr. and Mrs. Eberhardt. An interesting note is that in the construction of the home, the hexagonal cell of the honeycomb was used as a model, with the panes of glass in doors and window of a six-sided pattern.

1/ Professor of Apiculture, Department of Horticulture, Univ. of Illinois, Urbana, Ill.

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Dr. Vern G. Milum

Also at Bonn, we had the privilege of conferring with Dr. W. Wittekundt who had recently earned his Doctor's degree with a problem having to do with bee dances. Although Dr. Wittekundt and his good wife, also a Doctor, are now working in a cancer institute, I am sure that his first love will prevail and we will be hearing more from him, apiculturally. He is preparing an English report of his observations.

From Bonn, Mrs. Milum and I travelled to Hannover intending to stop the next day at Celle to visit the laboratory at the Beekeeping Institute headed by Dr. Evenius. Having made the mistake of boarding a limited train, there was no stop at Celle, so we were forcibly on our way to Hamburg, Copenhagen, Goteburg, Oslo and Stockholm and back to Copenhagen for the Pollination Conference, August 12-14, ably organized and conducted by Dr. Ole Hammer of the Danish Bee Research Institute at Hillerod and his assistant, Dr. Tom Mittler.

During the first one and one-half days papers were given by several Americans including Dean E. G. Lindsley, of the California College of Agriculture, F. G. Holdaway of Minnesota, C. J. Johansen of Pullman, Washington, B. E. Montgomery of Purdue University, M. W. Pederson of Logan, Utah, F. C. Todd of Tucson, and your writer, who was also privileged with being the moderator on the second day. The papers as a whole principally covered the use and results obtained from the use of honeybees in the pollination of red clover and alfalfa, as also the artificial propagation and use of bumblebees. It seemed to be the general opinion that in any consideration of pollination in a given area, the value of all bees, including the wild types should be taken into consideration.

The group of about 60 visitors were the guests of the Danish government for lunch the second day, followed by visits to seed production farms, the Swedish Experimental Farm and Dr. Hammer's Beekeeping Institute. At the agronomy farms Doctors Norgaard-Holm and Haas exhibited their indoor or greenhouse domiciles for two species of bumblebees being propagated as individual colonies established in nesting boxes, to be transported to fields for outside pollination. In 1959, 245 queens hibernated, this giving some indication of nest establishment possibilities. These researchers were also cross breeding strains of alfalfa hoping to develop strains having both a shorter and a more open type of corolla.

On the third day a visit was made to the Experimental Farms in Sweden, but this writer was on his way to Vienna, passing on the way by steamer down the Danube, the village of Durnstein, where we visited on an excursion out of Vienna a small beekeeper having only a small three frame extractor and who bottled his honey from a five or six gallon tank, apparently without heating. In general, we would say that the hives and equipment of Europeans we observed even at the Institutes, would soon be abandoned by our American producers. Most of the institutes, while well staffed, were very short of laboratory and library facilities.

The Entomological Congress at Vienna had apicultural sessions but owing to language difficulties, your writer cannot transmit much information. Although papers were presented by E. Oertel of Louisiana and D. O. Wolfenberger of Florida, at one all day session, of ten papers presented concerning honeydew all were in German except two. That day we spent in consultation with

Dr. Harold Esch, of the Zoology Institute (apiculture section) of Munich. The story of his recent Ph.D. thesis, we hope will appear in English before too long, because he has made some interesting observations and added some facts about bee dances not now generally known.

Another day of our Vienna stay was occupied by a bus excursion to a mountain apiary and to a private beekeeping institute. In the former apiary, much of the surplus was honeydew claimed to be of better quality and flavor than our American type. The hives, side by side in groups of five or six, had their entrances painted in different colo-s to reduce drifting. The frames, somewhat square, were examined by pulling out sliding trays at the back. Each sheet of foundation had some seven or eight holes cut out about the size of a quarter. Advantages claimed were less wax, better ventilation, and less swarming, to which the writer is not sure that he agrees. The bees were Carniolans with some yellow bees, claimed to be from the original Carniolan race, but we heard some dissenters on this theory.

The private beekeeping institute was at Wiener Neustadt, outside Vienna, where a class room in the building provided a place for week-long schools or on week ends. Sleeping quarters were also provided. Such an institute is owned and operated for the benefit of its members. There are nine private beekeeping schools in Austria.

On our last half day in Vienna, we journeyed by street car to the suburbs to visit the Bundeslehr und Versuchsanstalt (Bundesunstalt) fur Bienenkunde at Gvinzer Allee 74. This was the main Austrian federal laboratory, with a branch at Lunz where queens are bred and sold. Carniolans of the Troiseck strain are used at Vienna. These are said to be the Carniolans of the hills which because of one up-surge of brood rearing in the spring are less inclined to swarm than valley strains which raise more brood throughout the year, hence more swarming. House apiaries were in vogue here as well as Wiener Neustadt.

On our travels by train and bus, we saw comparatively few apiaries, mostly of non-modern hives. Whenever the beekeeper was working the colonies, he was always well protected by veils, jackets, and gloves, and in one case, even from the sun by an unbrella over his head. Of course, our observations may not have have been typical. Production per colony is apparently rather low, but the price is good — the beekeeper at Durnstein was selling his unprocessed honey at a price equivalent to 60 cents a pound. Dr. Hammer in Denmark reported that their small surplus was extracted soon after the main honey flow, to save it from being consumed by the bees, and the colonies fed sugar syrup for winter stores.

In early September, we were entertained at the Rothamsted Experiment Station at Harpenden Herts, England, by a part of the staff of the Beekeeping Department including Dr. Colin G. Butler (Head), Dr. Fred and Dr. Simpson, whose research works are well known. Our topics discussed naturally included bee dances, queen substance, bee diseases, and swarming, lack of space for which prohibits further comments. In conclusion, we must say that European bee folks are a gracious hospitable group, as everywhere, we so find them through America also.

"YOU SURE MUST LIKE HONEY!"

Bees in this sheltered spot are resting quietly. Note the upper entrances that permit bees to get out, in case lower entrances become clogged with dead bees or ice.

# Talks To Beekeepers

M. J. DEYELL

FEBRUARY IS USUALLY a rough month in the North and and this brings to mind the story of the old colored gentleman who said he had lived a long time but had always noticed that if he managed to get through the month of February, he lived through the rest of the year.

Perhaps that is how some of us feel about our bees, especially beekeepers in the far North where bees are kept in hives for a number of weeks without any cleansing flights.

As a rule, however, there is a break in the weather some time during late January or early February, in this area, that permits bees to have a thorough cleansing flight.

In some areas of the far North bees are sometimes kept in their hives for almost five months without being permitted a flight. It is, of course, necessary that such colonies have good food, well ripened honey, also that the colonies be quite populous in bees, so that if some of the old bees die off during the winter there will be enough young vigorous bees left to carry on.

Some beekeepers in the far North, as for example the northern tier of states, or provinces of Canada, just north of the line, are now wintering bees out-of-doors, the hives being covered with black building paper which affords some protection against the winter winds, also absorbs some of the sun's rays. Referring to an article entitled "The Economics of Wintering Honeybees in Manitoba", by J. E. Geiger of Brandon Experimental Farm, appearing in December 1960 Canadian Bee Journal, it was learned that "During a 13 year period, 650 colonies cellar-wintered had an average loss of 34 pounds and 230 colonies packed outside lost an average of 37 pounds. Loss in weight was calculated from mid-September to mid-April. It is probably safe to say that when other factors are comparable, the method of wintering has little bearing on the amount of feed the colony consumes. Therefore, considering all experimental data available, one can estimate that a colony of bees in this latitude will consume 35 pounds of feed during the winter".

The conclusion reached by the writer of the article is that wintering of colonies of bees can be made profitable in Manitoba.

That being the case in the latitude of Manitoba, it seems safe to assume that bees in latitudes south of Manitoba can be wintered successfully if beekeepers are willing to put into practice the principles that govern successful wintering, populous colonies, an abundance of food of good quality and adequate protection against the elements.

**"We Can Dream, Can't We?"**

As we beekeepers in the North recline in our easy chairs before the fireplace and listen to the winter winds howling out-of-doors we can dream of bygone days when our bees piled up big surpluses of honey and also other years when the crop was below average. And it is natural to dream of the big crop we are going to secure this coming season.

In my own case, I can recall the best honey crop we ever secured in this area, during the season of 1938 when hives were piled eight and ten stories high. The major honey flow began the last week in May and continued until the middle of August.

I can also recall another season in the early 50's when it was necessary, in this area to feed bees during June and July, to keep them alive.

One interesting thing about a good year is that it seems natural at the time to assume that seasons to follow may be similar to the good season. However, since one extreme usually follows another, it is well to keep in mind the fact that the season following a bumper crop may perhaps be a poor season.

**A Word to the Wise**

Commercial beekeepers should take advantage of a good season by setting aside a few dollars in what is sometimes called a sinking fund, to help tide them over possible poor years that may occur in the future.

**Catch Up on Reading**

Beekeepers interested in keeping abreast with approved methods of apiary management and honey marketing should surely steal enough time from the radio or TV to read the best books on beekeeping, also bee journals. At least one can become familiar with the latest theories expounded in the litera-

ture. Later on, during the active bee season one has an opportunity to put these theories into practice.

**Assembling and Painting Hives**

Most sideline beekeepers have heated rooms or basements where they can nail up hives and paint them during the winter months in readiness for use during the active bee season. It is an advantage to have such equipment ready for package bees or swarms, especially in the event that the honey flow may come on rather suddenly.

Those who plan to start with packages of bees and queens should have hives containing frames with full sheets of foundation all ready for the packages when they arrive. In the meantime the hives containing the comb foundation should be made mouse-proof in case mice may gain entrance to the building where hives are kept.

Regarding the painting of hives, some prefer to paint them during the spring or summer when they are placed on stands. It seems to be an advantage, however, to paint the hives and supers before they are set out in the apiary.

**How Colonies Develop in Early Spring**

It would appear that queens in the North as well as the South begin laying a few eggs the latter part of January or early February. Some years ago I had occasion to visit a beekeeper living near New Orleans, Louisiana. We checked into a few colonies on New Year's Day and found brood in two or three combs.

I have corresponded with beekeepers in northern states who mention finding brood in combs of normal colonies during late January and early February. I have looked into normal colonies in this area the middle of February and have found small patches of brood in three combs. The brood in the middle comb was almost the size and shape of my hand, which is fairly large. Two adjacent combs contained smaller patches of brood. I found a few young emerging bees in the middle combs.

There is a marvelous balance running through all of nature. During early spring some of the bees that were born early the previous fall begin to die off. The young bees that are born early in the spring are needed to replace the bees that die off.

When a colony develops to the point where it has more than three combs of brood it will increase in strength quite rapidly provided, of course, pollen and nectar are available and the weather is suitable for bee flight.

**The Scale Hive**

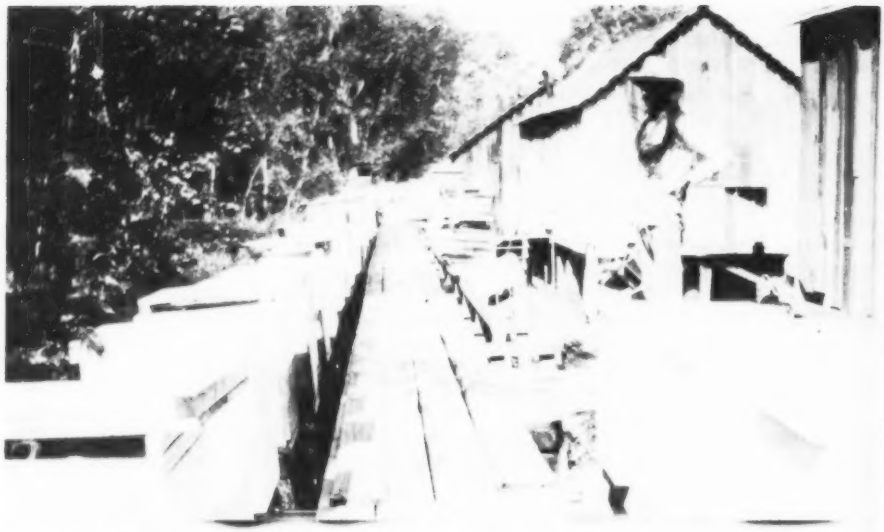
For a number of years we have maintained a scale hive near the Gleanings office. We have found that the weight of the hive decreases approximately four pounds per month during December, January and February. As warm weather approaches brood rearing increases and consequently more honey is used to feed the young larvae and the hive loses weight more rapidly, during late February, March and early April.

Beekeepers in this latitude and further north need not be concerned about their colonies during February provided they have an adequate amount of honey in each hive. In the southern tier of states pollen is available for bees during January and consequently colonies begin developing rapidly. It is usually necessary to provide more comb space for brood rearing and incoming nectar in some areas of the South during this month.

**A Southern Experience**

Since some beekeepers take bees south to make increase, the following tells what The A. I. Root Company did years ago.

During the fall of 1913 The A. I. Root Company shipped a carload of bees, 325 hives, to Randlett's Landing, 16 miles north of Apalachicola, Florida on the Apalachicola River, the idea being to divide the colonies during the early spring months and make four carloads of bees to ship north during late April and early May. Hive parts were shipped to the Landing in the flat and assembled. A queen breeder reared the necessary queens for increase. In due time the first carload of bees was ready to be shipped north and I was elected to go down after this car of bees. I left Medina the 19th of April during a cold spell when there was snow on the ground. When I reached Montgomery, Alabama one spring morning the green grass and vegetation appeared to be six weeks in advance of what we had



Shows hives of bees on high platform or staging beside the old Apalachicola river in Florida.

in the North. The day after arriving in camp I helped the boys extract some tupelo honey. The flow had started just before I arrived. I have seen quite a number of honey flows in my time but never have I seen bees work so fast and so long each day as at Randlett's Landing.

**Starting North with the First Car of Bees**

It was quite a job to get 325 colonies ready, each in a single story ten frame standard hive, screened top and bottom. Each hive contained five or six frames of brood well covered with bees and some combs containing honey. The hives were loaded on an old type river boat, a back wheeler of the type Mark Twain rode on years ago. The bees were taken up the river about a hundred miles to Bainbridge, Georgia where they were transferred onto a 40 foot stock car for the remainder of the trip. It took almost 24 hours to make the run from Randlett's Landing to Bainbridge, Georgia. It was not uncommon to see an alligator sunning himself on the bank of the river.

It took almost half a day to build stagings in the stock car ready for the bees. Along about five o'clock in the evening the hives were loaded. My camp bed was located near the door at one side and I rode with the bees for five days and five nights, arriving in Medina one afternoon.

There were two large barrels of water in the car. When the weather got hot and bees began to roar I would sprinkle water on the top screens of the hives which were in tiers three high. Water would cool them off. The bees drank four 50 gallon barrels of water enroute. I know, because I watered them. The bees were unloaded that evening and taken to various apiaries. The fruit bloom and dandelion honey flows were on around Medina which made it possible for these colonies to build up rapidly.

After remaining in Medina for three days helping to care for the bees and incidentally, to catch up on lost sleep, I was asked to bring up a second carload of bees. During those days I was young, full of pep and ready for any new venture that presented itself. We did succeed in producing four carloads of bees from the one carload taken down the previous fall. This was possible because we had an experienced queen breeder to produce laying queens for the increase, also there was a heavy Tupelo honey flow which gave us 19 50-gallon barrels of surplus honey.

You will find this story in detail in the February and March 1951 issues of Gleanings.

# Is This the Answer?

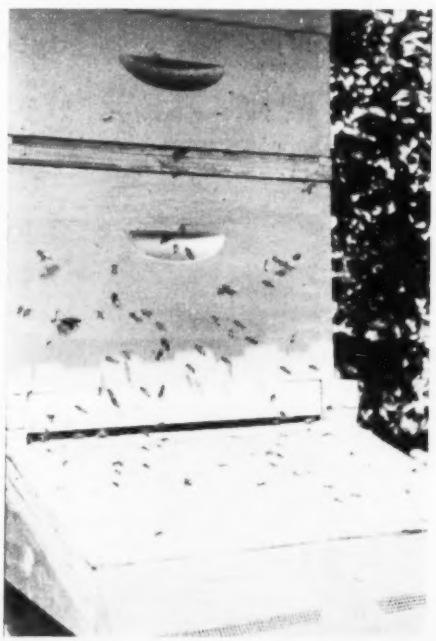
**Keeping bees from gnawing along the bottom bar of perfectly drawn combs in the brood chamber has always constituted a big problem. With a new season just ahead why not try and see if you can find the answer?**

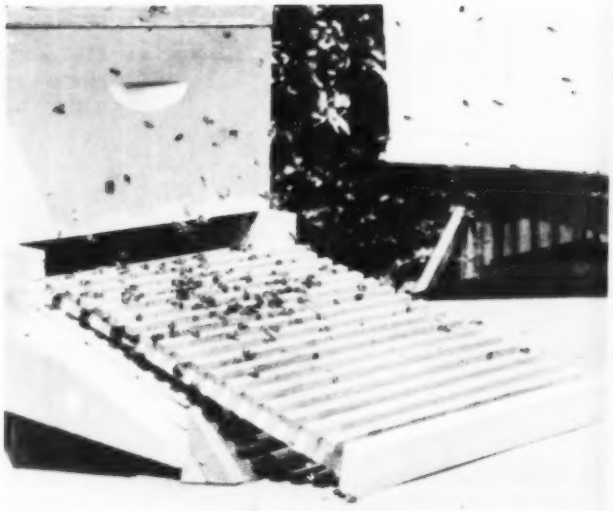
**CHARLES J. KOOVER**
**Altadena, Calif.**

IN THE MAY 1959 issue of Gleanings in Bee Culture, Carl E. Killion of Paris, Illinois wrote as follows: "If the readers of this article would try a deep bottom board one season I wonder how many would go back to the ones they have been using. In my inspection work I find thousands of frames in hives where bees have gnawed their combs away from the bottom bars (or never built down to them). In my conversation with the owners they seemed to think it natural for bees to do this. It may be a natural instinct but there is a way either to fool the bees or give them what they want and it will eliminate all this space next to the bottom bar. In so doing there is considerable brood rearing space added to the brood frame."

Instead of saying "what they want" I would like to make the correction "what they need" and base that on the following experience: Like many other readers of this article I wondered what the dimensions of this bottom board were. Luck was with me for I have a copy of the 23rd edition of Langstroth's "The Hive and Honeybee' which shows on page 125 two photographs of Dr. Miller's bottom board and bottom rack and gives specifications as to the construction of same. I made up two sets of the deep bottom board and rack and installed them under a couple of hives this spring. Early in the summer I lowered a super with beautifully drawn new combs full of brood onto this new bottom board arrangement and watched the proceedings from then on. The combs had been drawn clear down to the bottom bars of the frames. Everything went well until the first few cool nights when the bees began to carry out dead brood. Inspection revealed no signs of disease but each and every comb had the usual one-inch-wide slot gnawed the whole length of the bottom bar. If I had known what I know now after reading Mr. Killion's second article about the deep bottom board in the June 1960 issue of Gleanings in

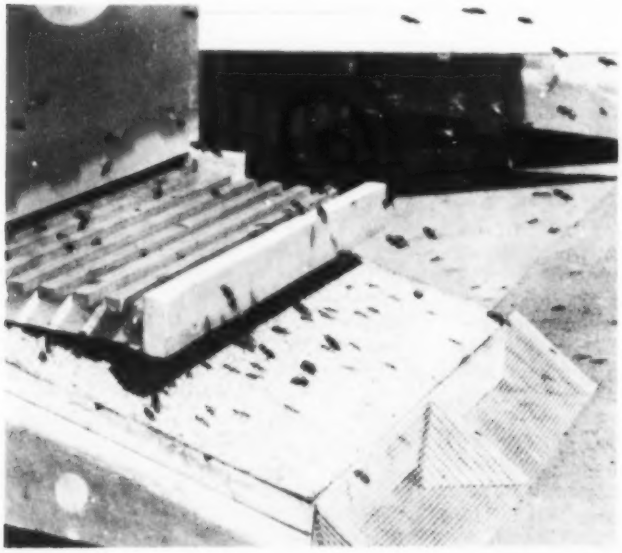
The standard $^1/_4$-inch year-around California hive opening has been maintained.





The Dr. Miller deep bottom board and rack are a great aid in keeping the hive cool in hot weather. The month of July was the seventh hottest July on record in Southern California with a heat wave that lasted 26 days with daytime temperatures up into the high 90's. For four days the temperature climbed to 106 and two days it reached 110. But the bees in the hives with the deep bottom boards did not hang out as they formerly did. Of course, they were well shaded.

Bee Culture I could have forestalled this destruction by the bees of their combs. However I might not have asked the question I am raising now. Bees do not wantonly destroy their perfectly good combs. Is it that they gnawed this one-inch-wide slot so as to be able to warm their brood when the temperature drops during cold nights because they are unable to do this when brood is located in cells next to the wooden bottom bars? Mr. Killion's improved rack with its four-inch wide board at the front end seems to provide this protection against chilling. If this prevents the gnawing of the combs, as Mr. Killion has found, he will have perfected the entrance to the beehive. Furthermore he will have made a very important contribution to the welfare of the bees and to the pocketbook of each and every beekeeper.



The bottom rack has since been changed to a four-inch-wide solid board at the front end as Mr. Killion suggests in his article.



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# NEWS and EVENTS

## LOUISIANA

**41st Beekeepers' Association Meeting**

The 41st meeting of the Louisiana Beekeepers' Association that met in Baton Rouge, December 6th was one of the most interesting gatherings ever attended by your Gleanings reporter. In the meeting room in the auditorium there were many beekeeping specialists of national renown from the U.S. Dept. of Agriculture. Outside of a national meeting, a visitor would seldom have the opportunity to visit with so many outstanding beekeepers and scientists at one time.

Mr. E. C. Bessonet got the show on the road with his informative report on the 1960 Federation meeting in Phoenix. He was followed by the promising beekeeping scientist, Dr. Stephen Tabor, who reported on his new methods of importing new strains of bees into this country. Tabor has successfully shipped semen from Italian drones to different parts of the world and successful artificial matings have resulted both here and abroad. In artificial mating a new problem has arisen, according to Dr. Otto Mackensen of the U.S.D.A. Research Laboratory at Baton Rouge. Artificially inseminated queens have shown an unexpected infection with Septicemia. To overcome this problem it is recommended that the syringe and other instruments be sterilized.

Louisiana's plans for honey marketing and the roll of the Check-off Plan was aptly covered by Otis Mitchell, beekeeper and honey packer. It was disappointing to learn of the poor participation in the Check-off Plan by Louisiana beekeepers and honey packers. Both Mr. Mitchell and Mr. Bessonet expressed concern and hoped that state interest in the plan could be developed.

Veteran bee scientist, Dr. Everett Oertel, presented his 1960 experiences wth a scale colony maintained at the Baton Rouge Bee Laboratory of the U. S. Dept. of Agriculture.

Means of reducing beeswax losses through better rendering was the theme of an illustrated talk by Walter Barth of The A. I. Root Co. of Texas. He pointed out that Louisiana's yearly production of beeswax could be increased by over 100,000 pounds by preventing wax moth damage to combs, saving all waste bits of comb and scrapings, and more careful attention to rendering.

Louis Couch really started things humming with his discussion of apiary regulations and the need for a change. The pros and cons were many. Since this is a serious local problem we will omit any report on the discussion here. However, beekeepers can secure details from their local bee inspectors as they were in attendance.

Officers re-elected for 1961 are: President, James D. Bernard, Breaux Bridge, Louisiana; Vice President, Louis Couch, Pineville, Louisiana; and Secretary-Treasurer, Joseph J. Perry, Lake Charles, Louisiana.

## MISSOURI

**Midwestern Beekeepers' Association**
**Kansas City, Mo.**
**February 12, 1961**

The Midwestern Beekeepers' Association will hold its regular monthly meeting at the I.O.O.F. Hall, 812 Westport Road, Kansas City, Missouri, at 2:30 P.M., Sunday, February 12, 1961.

There will be a speaker and discussion as well as the regular order of business. Refreshments will be served. Everyone welcome. James A. Worrel, Secretary.

The Portland, Oregon Beekeepers' Association annual honey exhibit consisting of 111 jars of extracted honey from thirty-one beekeepers.

## OREGON

### Portland Beekeepers' Association

The Portland Beekeepers' Association of Portland, Oregon, held their annual exhibit recently that would do credit to any State Fair. There were 111 jars of extracted honey from 31 beekeepers who represented an estimated crop of 125 tons of honey. There were exhibits of three observation hives of bees with their queens, beeswax, beeswax candles, comb honey in shallow extracting frames, honey vinegar and extracted honey from England and Scotland. Mr. H. J. Moulton, a Past President of the Oregon Beekeepers' Association, displayed 28 samples of honey received from many parts of the world.

Dr. H. A. Scullen, Professor Emeritus, from the Oregon State College, made comments on the honey, as well as on the containers and the labels. The display was on four adjoining tables with lights shining through the honey. There were no prizes given. The show was to educate the beekeepers on how to prepare their honey for quality and attractiveness.

The idea of the exhibits was by Mr. Rex Bunnage, a Past President of the Portland Beekeepers' Association, who assisted Dr. Scullen in the judging.

The Portland Beekeepers' Association is a very progressive group. For several years they have conducted a bee school. They meet once a month which includes a field trip to teach the amateur what to do the succeeding month. —John F. Erickson, Portland, Oregon.

## MASSACHUSETTS

### Middlesex County Beekeepers' Assn. Waltham, Massachusetts February 25, 1961

The Middlesex County Beekeepers' Association will meet February 25, 1961, 6:30 P.M. at Field Station, Waltham, Massachusetts. Many interesting topics are being discussed at our winter meetings. Spring is not far away and our beekeepers are ready to use the many new ideas learned.

Mr. Harold Stevens will talk on "Assembling a Hive."

Friends of Middlesex County Beekeepers are invited to our potluck suppers and meetings. Bring a casserole, salad or dessert and place settings of dishes. Coffee is supplied by the association.—Betty Carlson, Corres. Sec.

## KANSAS

### Northeastern Kansas Beekeepers' Assn. Kansas City, Kansas February 5, 1961

All members, and any others interested in Bee Culture, are invited and urged to attend the meeting of this association which will be held Sunday, February 5th, 2:30 P.M., in the I.O.O.F. Hall, 2107 Silver Avenue, Kansas City, Kansas. (Argentine District). From Metropolitan Avenue, stop sign at 21st St. (just west of 18th St. traffic way) go one block south, then west on Silver about the 3rd door.

The program will consist of an out-of-town speaker on interesting highlights. Seasonal suggestions will be in

order. Refreshments will follow the regular order of business of the meeting.—R. F. Ferguson, Ass'n. Editor.

### VIRGINIA
**State Beekeepers' Association**
**Richmond, Virginia**
**February 22, 1961**

The regular annual meeting of the Virginia State Beekeepers' Association will be held in Richmond, Virginia, Woodman's Hall, near Hull Street, 413 Corwadin Avenue, February 22, 1961.

An interesting program is being planned, also election of officers and other business will come before this meeting. The meeting will be from 9:30 a.m. until 3:00 p.m. All beekeepers are invited to attend.—Henry W. Weatherford, Sec.-Treas.

### CONNECTICUT
**Beekeepers' Association**
**New Haven, Connecticut**
**February 25, 1961**

The annual winter meeting of the Connecticut Beekeepers' Association, Inc., will be held February 25, 1961, beginning at 10 A.M. at the Connecticut Agricultural Experiment Station, Huntington Street, New Haven, Conn.

The schedule for the day is: Reporting on the American Beekeeping Federation, also a panel discussion on subjects of interest.

Lunch will be pot-luck by those attending. Coffee will be furnished. All beekeepers and friends are invited to attend this meeting for information and for meeting your friends.—Philemon J. Hewitt, Jr.

### MASSACHUSETTS
**Bristol County Beekeepers' Association**
**New Bedford, Mass.**
**February 15, 1961**

The Bristal County Beekeepers' Association of Massachusetts cordially invite all beekeepers from neighboring counties to come to their next meeting Wednesday evening, February 15, 1961 at 7:45 P.M. in New Bedford. The faculty of the Bristol County Agricultural School have graciously permitted us the use of Room No. 1 in which we have already held many important meetings and more important of late we have been holding our free beekeeping school lessons here.

We shall continue with our third lesson and hear a timely discourse given by Mr. Stanley J. Maslanka, director of the school, on the "Anatomy of the Bee" with the aid of slides. Colored slides will be shown on "Hybrid Queen Development". Following the close of the lesson pamphlets will be distributed which help to more fully explain the subjects of the evening.

Please come early and spend a few extra moments examining the beautiful new beehive which was constructed at our first lesson. This will be laid out in parts and named so you can see the neat work done as well as get acquainted with the use of the different parts of the hive. This hive has since then been twice painted in white by Mr. Maslanka and it's a "honey of a place for a bee's home". Our genial hostess will serve you all with delicious refreshments at the close of the evening. —Mary V. Maslanka, Corres. Sec'y.

### GEORGIA
**Joins in Check-off Payment Plan**

We understand Georgia has joined the ranks of California and Utah in having a Check-off payment to the state government to promote the sale of honey. We hope other states may follow suit.

### DR. JOHN STONFAY-STITZ
**Requests Samples of Dandelion** Honey

Dr. John Stonfay-Stitz, Professor of Biology at Duquesne University, and a re-nowned scientist on honey research is requesting samples of pure "dandelion honey." If you secure any of this honey this spring Dr. Stonfay-Stitz would certainly appreciate receiving samples of this honey.

# Obituary

## JAY REDFIELD

JAY REDFIELD, the last remaining founder of Superior Honey Company passed away November 23rd. He was an officer of Superior Honey Company and operated the Idaho Falls branch of this company which handles large quantities of honey, beeswax and bee equipment. He was highly respected by the industry and his death is a great loss.

# Buy and Sell

Classified rates: 18¢ per counted word, each insertion. Each initial, each word in names and addresses, the shortest word such as "a" and the longest word possible for the advertiser to use, as well as any number (regardless of how many figures in it) count as one word. Copy should be in by the 10th of the month, preceding publication.

## HONEY FOR SALE

WE BUY AND SELL all varieties of honey. Any quantity. Write us for best prices obtainable. HUBBARD APIARIES, ONSTED, MICHIGAN.

IOWA HONEY, one can or truck loads. RUSSELL D. SMALLEY, BEAVER, IOWA.

CLOVER extracted honey in sixties. ABRAM BRUBAKER, 1525 September Dr., LANCASTER, PA.

TUPELO, wild flower, alfalfa, or orange, in 60's. LANCASTER COUNTY DUTCH GOLD APIARIES, 910 State St., LANCASTER, PA.

HONEY—In any size container, also Mail Order Dealer for Bee Supplies. Write for prices. L. E. ALLEN, TIPTON, MICH.

FOR SALE—Bulk comb honey, white, good quality, by truckload. ROBINS APIARIES, KENNETT, MO.

LIGHT CLOVER, new 60's. Few cans buckwheat. LA VERNE DEPEW, AUBURN, N. Y.

CLOVER HONEY in sixties. 725 cans. Samples on request. MAYNARD GEARIG, ITHACA, MICHIGAN

HONEY FOR SALE in 60's. MRS. WM. R. STEPHENS, WINGATE, IND.

## HONEY AND WAX WANTED

**BEEKEEPERS TAKE NOTICE—We cannot guarantee honey buyers' financial responsibility, and advise all beekeepers to sell for cash only or on C.O.D. terms except where the buyer has thoroughly established his credit with the seller.**

WANTED—All grades of extracted honey. Send sample and price. DEER CREEK HONEY FARMS, LONDON, OHIO.

CASH FOR BEESWAX. Write as to quantity and we will quote price. MUENCH-KREUZER CANDLE CO., INC., SYRACUSE, N. Y.

WANTED—White extracted or comb honey. Send sample. MILLERSPORT HONEY CO., MILLERSPORT, OHIO.

BEESWAX WANTED—Highest prices paid in cash or trade for bee supplies. THE A. I. ROOT CO., MEDINA, OHIO; COUNCIL BLUFFS, IOWA; SAN ANTONIO, TEXAS.

WANTED—Light amber clover, fall flowers, buckwheat and white clover. Send sample and lowest price. CLOVERDALE HONEY CO., FREDONIA, N. Y.

WRITE FOR SHIPPING TAGS and quotations on rendered beeswax. We buy from one pound up and if you have over 25 pounds let us work it into foundation for you at a 25 per cent saving. WALTER T. KELLEY CO., CLARKSON, KY.

WANTED—Buckwheat and light amber honey. EASTERN FOOD PRODUCTS, 421 Bedford Ave., BROOKLYN, N. Y.

HONEY WANTED for bottling, all types in drums, tins, trailer and car lots. Send samples each lot. Write: CHAS. E. FARRIS CO., 99 Hudson St., NEW YORK CITY. Est. since 1910.

WANTED—Honey in 60 pound cans, also beeswax any quantity. L. E. ALLEN, TIPTON, MICHIGAN.

ALL GRADES extracted honey wanted in both 60 pound cans and 600 pound drums. PRAIRIE VIEW HONEY CO., 12303 12th St., DETROIT 6, MICHIGAN.

WANTED, chunk comb and extracted honey. Mail sample and price. STOLLER HONEY FARMS, LATTY, OHIO.

WE RENDER cappings, old combs and buy your beeswax. Shipping tags sent on request. M. R. CARY CORP., GPO Box 818, SYRACUSE 1, NEW YORK.

WANTED — Chunk and extracted honey. Send sample and price. RONALD CULP, CIRCLEVILLE, OHIO.

WANTED—Honey and Beeswax. WALLY'S BEE ENTERPRISE, 4900 Morningside, SIOUX CITY, IOWA.

EXPERT Wax Rendering. STAN TRESCOTT, U.S. Hiway 15, WEBSTERS CROSSING, N. Y.

## BEE SUPPLIES FOR SALE

WRITE FOR CATALOG—Quality Bee Supplies at factory prices. Prompt shipment. Satisfaction guaranteed. HUBBARD APIARIES, Manufacturers of Beekeepers' Supplies and Comb Foundation, ONSTED, MICHIGAN.

THE BIGGEST Bee Supply Catalog published (64 pages) free for the asking. Listing many items not found in other catalogs. No agents—buy direct and save 20%. WALTER T. KELLEY CO., CLARKSON, KENTUCKY.

QUEENBEE PAINTING OUTFITS, $1.50. INTERLOOKERS, $3.00 postpaid. SOUTHWICK APIARIES, WABAN, MASS.

FREE CATALOG—Cypress bee hives and bee supplies. Save up to 40% on hives that last. MYERS CRAFT MANUFACTURING CO., BURGAW, NORTH CAROLINA.

$ $ $ $ FRAMES & SUPERS $ $ $ $ — Factory prices. FRAMES, 9⅛, 1-100, 12¢; 1-1000, 8¢. SUPERS, 9⅝ depth, 1-12, $1.35; 25-100, $1.25; 100-1000, $1.15. Write for free catalog. KEHM BROTHERS APIARIES, Box 346 Route 1, GRAND ISLAND, NEBRASKA. Located 2 miles north of Drive-Inn Theater.

No. 1 Hive Bodies, $2.00; No. 2 Hive Bodies, $1.75; Covers and Bottom boards, $1.10; Shallow Extracting Supers, $1.25; Hoffman Full Depth Frames (per hundred), $11.00. Catalog on request. HAGEN-LUNCEFORD MFG. & SUPPLY CO., 2500 N. 4th Street, COEUR D'ALENE, IDAHO.

BEFORE YOU SELL your honey or buy your honey containers see HUBBARD APIARIES, ONSTED, MICHIGAN.

## USED EQUIPMENT FOR SALE

FOR SALE – Automatic End Bar Machine, Top Bar Machine, 2 Used Foundation Mills, 1 Wax Sheeting Machine. HUBBARD APIARIES, ONSTED, MICHIGAN.

## FOR SALE

FOR SALE—Complete, modern, up-to-date, fully equipped bee business. 700 colonies. 40 by 80 two story honey house. Three bedroom modern home. Retiring. J. D. HARRAH, CHARLO, MONT.

PURPLE LOOSESTRIFE and clover honey. Empty 60-pound cans, like new, would exchange for bees or equipment. FRED RUSSELL, CHELMSFORD, MASS.

## BEES AND QUEENS FOR SALE

**WE USE ALL POSSIBLE CARE in accepting advertisements but we cannot be held responsible in case disease occurs among bees sold or if dissatisfaction occurs. We suggest that prospective buyers ask for certificate of inspection as a matter of precaution.**

FOR SALE - - - - - HALF OUR BEES. 3,000 one story 10-frame colonies. No AFB. Good condition - honey for winter - FOB central California. $6.50 each in lots of 500 or more. ART HARRISON, Box 602, LOS BANOS, CALIFORNIA.

CARNIOLAN and CAUCASIAN BEES for 1961. Booking queens, each $1.25, clipped and marked. 2 pound package with queen, $4.00. 3 pound package with queen, $5.00. LEWIS & TILLERY BEE CO., R. 3, Box 261, Phone DU 2-8371, GREENVILLE, ALABAMA.

ITALIAN QUEENS—Order early for 1961. NEUSE APIARIES, KINGSBURY, TEXAS.

QUALITY ITALIAN QUEEN BEES—Until June 1st, each $1.35, 5 or more $1.30 each, 25 or more $1.25 each. Reduced prices after June 1st. Write for package bee prices. A. G. WOODMAN CO., GRAND RAPIDS, MICH. or LENA, S. C.

ITALIAN and CARNIOLAN bees, 3 lb., $5.00; 5 lb., $7.00; Queens, $1.30. LUTHER PICKETT, EFLAND, N. C.

BOOSTER BEES, 75 cents pound, in your cages after May 15th. Can supply new cages and queens. A. V. DOWLING, North St., VALDOSTA, GA.

APPROXIMATELY 100 two story colonies bees, ¾ depth hives, no locations. Available mid-spring with state inspection at Trumansburg, N. Y. ROGER C. LANE, 1033 Oak St., DUNEDIN, FLA.

## ROYAL JELLY

ROYAL JELLY—$8.00 per ounce, postpaid. Write for prices in large lots. THE STOVER APIARIES, MAYHEW, MISS.

SUPER STRENGTH 100 mg. Royal Jelly capsules in bottles of 100 for $10.00. PRAIRIE VIEW HONEY CO., 12303 Twelfth St., DETROIT 6, MICHIGAN.


**HONEY LABELS**
Improved designs, embodying color, balance, simplicity, and distinction. Please send for free samples & prices.
**C. W. AEPPLER COMPANY**
Oconomowoc, Wisconsin

**"SWARMING STOPPED COLD"**
95% Foolproof
No Gimmicks
No Gadgets
No Tricks
Bigger Crops - Better Beekeeping
Full Directions Price $1.00
**BAKER'S APIARIES**
Glencoe Illinois

**J. E. WING & SONS**
48 Years Continuous Service
Italian Package Bees
and Queens
Our Specialty
Knights Landing, Calif.

**CONNEAUT**
The SIXTY for the SIXTIES
Handled by
Leading Jobbers
Made by
THE CONNEAUT CAN CO.
Conneaut, Ohio

**HONEY WANTED**
Carloads and less than carloads. Mail sample and best prices in all grades.
**W. F. STRAUB & CO.**
5520 Northwest Highway Chicago 30, Ill.

## HELP WANTED

HELP WANTED: Man needed for the 1961 season. Give qualifications in first letter. HOWARD WEAVER & SONS, NAVASOTA, TEX.

WANTED—Two experienced men to help produce package bees and queens, March to May 1. Chance for permanent employment for one. H. C. SHORT, FITZPATRICK, ALA.

WANTED—Beeman, or helper with some knowledge of beekeeping. Start work now. Box 19, GLEANINGS, MEDINA, OHIO.

WANTED—One or two men willing to work bees on shares or wages. HUBBARD APIARIES, ONSTED, MICHIGAN.

WANTED—Experienced helper for season. Write stating age, experience, reference, wages expected etc. SODER APIARIES, STRATFORD, IOWA.

## MISCELLANEOUS

BEES REMOVED from house or tree or hive without touching either house or bees. Bees will then move honey into hive. Save property, honey, and bees with my method. Send $2.00 for details. Satisfaction guaranteed. GEORGE HAWKINS, Rt. 1, LAWSON, MO.

RENDERING every day in our all new plant. All honey saved from cappings. Rendering slumgum and old combs. Write for free shipping tags and rates. HUBBARD APIARIES, ONSTED, MICHIGAN.

WE BUILD HIVE LOADERS, or furnish plans, motors, power units, parts. GARTRELL'S, 6001 Muldrow Road, CARMICHAEL, CALIF.

FREE SERVICE—Wanted & For Sale Board. Send list of your Wanted and For Sale items—Bees, Extractor, Knives and other beekeeping items. Each visit at Hubbard's check board for Bargains. HUBBARD APIARIES, ONSTED, MICHIGAN.

## WANTED

LARGE BEE SUPPLY Manufacturer and Honey Processor wants Supply Dealers and Honey Buyers. Write for Catalog and Honey Prices. HUBBARD APIARIES, ONSTED, MICH.

WANTED small and large lots of bees and equipment, including extractors. HUBBARD APIARIES, ONSTED, MICH.

VERY RELIABLE and experienced beekeeper, best of references, wants a big outfit on shares, one or several seasons. Anywhere, preferably North Central States. Can bring helpers. GLEANINGS, Box 27, MEDINA, OHIO

BOOKS—ON BEES and Beekeeping wanted. Any language, old or new, send title and price. MEL-GLAD. C.P. 1431, QUEBEC, CAN.

WANTED—50-500 hives within 500 miles of Freeport. CLOVERLAND PRODUCTS, Rt. 2, FREEPORT, ILLINOIS.

COLONIES in the state of WISCONSIN. Write JAMES TYNAN, Rt. 1, MT. CALVARY, WISCONSIN.

WANTED—To buy or lease bees in Midwest. FLOYD STUMPH, 493 Woodland Ave., MANSFIELD, OHIO.

## POSITION WANTED

BEEMAN wants position. LLOYD RANKIN, 307 Maple St., CARMI, ILLINOIS.

## SEEDS

HONEY PLANTS—Ask for illustrated 196 catalog. Vitex negundo, long blooming nectar shrub, 4 plants, $2.50; seed, one packet eac —five unusual honey plants, $1.00; postpaid PELLETT GARDENS, ATLANTIC, IOWA.

200 POUNDS of Argentina rape seed. Writ for price. HUBBARD APIARIES, ONSTED MICHIGAN.

## MAGAZINES

PROFIT AND HEALTH—Raise dairy goats Learn how. Monthly magazine, $2 yearly sample and information 25¢. DAIRY GOA JOURNAL, COLUMBIA T3, MISSOURI.

THE SCOTTISH BEEKEEPER (The offici organ of the Scottish Beekeepers' Associa tion.) Scottish in character, international i appeal. Annual subscription $2 post free Sample copy from ROBERT N. H. SKILLING F.S.C.T., 87 King St., KILMARNOCK, AYSHIRE

INDIAN BEE JOURNAL, know interestin facts concerning the honeybees of India The only Bee Journal of India published i English. Subscription Rs. 12/- or Sh. 17/6 (Sterling) or $2.75 per year (INTERNATIONA M.O.). Sample copy 2s. or 25 cents. Can b had from The Managing Editor, Indian Bee Journal, Naini Tal, U.P., India.

ARCHIV FUR BIENENKUNDE, In'ernationa journal for Bee Culture and beekeeping eco nomics. Founded in the fall of 1918. Oldes scientific bee journal in the world. Praised again and again for its decades of indepen dent leadership through many endorsements and advice as a valuable source also for the practice. Yearly DM 5.50. Any aspiring bee keeping friend will receive a sample copy BIENE-VERLAG, GIEBELBACHSTR, 19, LINDAU (B) GERMANY.

BEE WORLD, the international journal o the Bee Research Association publishe monthly, contains the latest research reports on bees and beekeeping. With Apicultura Abstracts it costs $5.50 per annum, or $6.00 including membership of the Bee Research Association. Apicultural Abstracts only $4.50 per annum from the Hon. Subscription Sec retary, Bee Research Association, 10 BAR NETT WOOD LANE, ASHTEAD, SURREY, ENG.

INTERESTED IN ANGORA GOATS? Read the SHEEP and GOAT RAISER, Hotel Cactus, Box 189, SAN ANGELO, TEXAS, the only ranch magazine published serving the Angora Goat Industry. Subscription, $3.00. Sample copy 25¢.

**Beeswax Rendering Service**
Exchange Your Beeswax
for Foundation
Write for Price List.
**WAX WORKERS, INC.**
**1330 Slaterville Rd. Ithaca, N. Y.**

## HISTORY OF PACKAGING BEES

(Continued from page 89)

causes the covers to pop off. To eliminate this trouble the writer has gone back to the Good candy for air shipments. It cuts down on weight, does away with the expense of the can and since the bees are only enroute an average of 24 hours they do not suffer for lack of moisture. An ordinary paper cup of the right size is used for the candy and a dozen ¼-inch holes are punched near the top to allow the bees to enter and get the food.

**What of the Future?**

What will the package shipping cage of the future be like? As suitable lumber for making cages gets scarcer and higher in price will we turn to other materials for our package shipping cages? Time alone will tell. There are two lines of thought on this. One is that we will use a comparatively cheap disposable cage as we do at the present time. The other is that we will use a light weight collapsible cage of aluminum or other metal that can be collapsed and returned to the shipper for a fraction of the cost of a new cage. Such a cage would probably cost more than the cage that we are using at present but if they could be used a number of times they might reduce costs. This would also bring up the question of disease and certain state laws against bringing in used equipment. Some cheap and effective way of sterilizing the cages would take care of the disease angle and most state laws have been interpreted to allow used cages to come in but a few states still ban the used cages.

Some work has been done on cardboard shipping cages but they have a number of disadvantages. They tend to melt if they get wet. They might be protected from rain but most shippers like to spray packages with water before shipping if the weather is hot. No practical way was found for crating them together. To get a cage sufficiently strong to stand shipping it would be necessary to use cardboard so heavy that it would weigh more and cost more than the wooden cage now in use.


**PACKAGE BEES**

Let us supply you packages with either ITALIAN or ISLAND HYBRID queens.

We will be ready to start shipping April 1st by method of your choice. FOB here.

— PRICES —

| With Italian Qns. | 1-24 | 25-99 | 100 up |
|---|---|---|---|
| 2 lb. (ea. qn.) | $4.75 | $4.50 | $4.25 |
| 3 lb. (ea. qn.) | 6.00 | 5.70 | 5.40 |

All queens clipped unless ordered otherwise. Marking 10¢ extra per queen.

For ISLAND HYBRID queens, add 30¢ each to above prices.

**"They Produce"**

Trucks loaded by prearrangement.

**Rossman Apiaries**

**P. O. Box 133 Moultrie, Ga.**

**The Australasian Beekeeper**

The senior beekeeping journal of the Southern hemisphere provides a complete cover of all beekeeping topics in one of the world's largest honey producing countries. Published monthly by Pender Bros. Pty. Ltd. Box 20, P. O., Maitland, 3N, N.S.W., Australia. Subscription by Bank Draft or International M.O. Australia and New Zealand 16/- per annum (in advance) post paid. British Isles and British Dominions 20/- per annum (in advance) post paid. Other overseas countries 23/-per annum (in advance) post paid. Sample copy free on request.

**NORMAN'S**

**Improved 3-Band**

**ITALIAN BEES & QUEENS**

From top honey producing hives.

| | |
|---|---|
| 2 lb. pkg. w/q | $3.75 |
| 3 lb. pkg. w/q | 4.75 |
| 4 lb. pkg. w/q | 5.75 |
| Queens | 1.00 |

Full weight, safe arrival guaranteed, with health certificate furnished. 10% books your order.

**NORMAN BEE CO.**

Route 1 Ramer, Ala.

**QUEENS**

**Carniolan and Caucasian**

Looking forward to 1961 season. Am offering same high producing queen bred for early build-up, gentleness, high production qualities of several years breeding. Prepared to operate 1500 nuclei to meet the increased demand.

**Queens, $1.45 each Air Mail**

Quantity Discount.

**W. D. REAMS**

**Box 458 La Belle, Fla.**

**HOLLOPETER'S**

**Hardy Northern Italian Queens**
**June-November. Our 50th year**

**WHITE PINE BEE FARMS**

**Rockton, Pa.**

**WILLIAMS ITALIAN QUEENS**

Unsurpassed By Any Stock
Certificate with each shipment

| | |
|---|---|
| 1-9 Air Mail | $1.25 each |
| 10-99 Air Mail | 1.15 each |
| 100 Up Air Mail | 1.05 each |

Clipped and Marked 10¢ each.

**DR. WILLIAMS APIARIES**

**115 W. Sterling Ave. Baytown, Texas**

**CALIF. CAUCASIAN QUEENS**

**1 to 24, $1.50 25 to 99, $1.35**
**100 up, $1.25**

**DON J. STRACHAN**

**Rt. 2, Box 325 Phone Sh 2-3881**
**YUBA CITY, CALIF.**

**TEXAS CAUCASIAN QUEENS AND PACKAGES**

BOOKING ORDERS FOR 1961

| | 1-24 | 25-99 | 100 up |
|---|---|---|---|
| 2 lb. pkg. w/q | $4.50 | $4.25 | $4.00 |
| 3 lb. pkg. w/q | 5.60 | 5.30 | 5.00 |
| Queens | 1.45 | 1.35 | 1.25 |

All queens personally produced by J. E. Hastings and his breeding stock bred for non swarming, very gentle, good honey producers.
10% books your order, balance two weeks prior to shipping. Health certificate, weight and live arrival guaranteed. Five cents extra for marking or clipping.

**KANES APIARIES**

**Rt. 1, Ph: SW 8-3039 Hallettsville, Texas**


## A DREAM CAMES TRUE

(Continued from page 86)

I had read about the size, shape, etc., of queen cells and decided that that was what they were. As I held the frame and wondered what to do I thought of two friends of mine; one who had helped her husband with bees years ago, and another who currently kept bees. As so often happens, I got two conflicting sets of advice. One said to divide the hive and use the queen cells for the new hive along with several frames of brood and adhering bees. The other said not to worry, the athel trees wouldn't bloom more than a couple of days more and with the first norther that blew in, (a cold snap with strong north winds to you uninitiated,) the bees would lose all thought of swarming. I took the last advice and it turned out just that way. The athel flow quit and the norther blew in and the bees destroyed the queen cells and unceremoniously dumped their contents outside the hive.

The bees went into winter with a large store of honey and very large numbers of young bees. However, I learned one more lesson of importance. When the north wind blows, wear gloves. The cooler wind makes the bees quite "ornery" and not at all like their usual busy little selves. I imagine the lack of much of a honey flow at this time had quite a bit to do with this change in temperament. They were inclined to sting too, whereas before, the only time I had been stung was when I had accidentally pinched a bee, once when removing a frame of honey and once while we moved the bees.

We finally ended up with three shallow supers of chunk honey, and, of course, left the top deep super for a food chamber. This I felt, was an excellent ending to our "comedy of errors" in beginning beekeeping.


**NOTICE:**

L. H. LITTLE, Shelbyville, Tenn. will not be breeding queens in 1961. Business taken over by—

**RICH MOUNTAIN APIARIES**

**Cosby, Tennessee**

Associated with L. H. Little Apiaries for several years in queen breeding. Offering same service and quality of ITALIAN QUEEN BEES

## MORE ABOUT BALL CLOVER

(Continued from page 92)

One of the technicians (a former sideline beekeeper) describes Ball Honey as of very light color and excellent flavor. He also mentioned that some beekeepers in Arkansas are anxious to place bees on this clover because of the fine honey and heavy honey flow.

As most farmers know, one cannot tell how any given plant will react when moved to locations having different soils, climates, and other factors. If I were to move to another location and be a cattle farmer and/or beekeeper, I most certainly would plant a small acreage of Ball Clover to see what it would do.

Just as I do not think of honey as a cure-all, but rather as an excellent addition to one's diet, I do not think of Ball Clover as a wonder plant, but as one that has a definite place in conservation farming.


Booking orders now.
Over 35 years a shipper.
Send for FREE Circulars.

**BLUE BONNET APIARIES also HOME of AULT BEE FARMS**
**Weslaco, Texas**

**ITALIAN**
**Package Bees and Queens**
**JOHN S. SHACKELFORD**
Rio Oso, California
Phone: Wheatland, Calif. NEptune 3-2392

**QUALITY BRED**
**Italian Queens**
Breeders selected from our northern apiaries for hardiness and honey production. Air mail delivery on all queens.
Lots of
1- 24 ..... $1.40 each
24- 99 ..... 1.30 each
100-499 ..... 1.25 each
Marking 10¢ extra, clipping free
**WALTER D. LEVERETTE APIARIES**
P.O. Box 364 Ft. Pierce, Fla.

**IT'S A FACT . . . .**
Good queens often times correct poor locations, disease, and crop failure.
Money can't buy a better queen.
**Leather Italians**
**FOR 1961 — BY AIR MAIL**

| | | After June 1st |
|---|---|---|
| 1-25 | $1.25 | $ .85 |
| 26 up | 1.00 | .75 |
| Select tested | $3.00 | |
| Approved breeders, | 5.00 | |

South America and European countries add 25¢.
Limited numbers of pkgs. express collect
2 lbs. with queen ..... $4.00
3 lbs. with queen ..... 5.00
50 pkgs. up deduct 25¢ per pkg.
You too can be sure by placing your order early.
25% books your order, balance 15 days prior to shipping date.
**O. K. Anderson & Son**
Box 516
Coffee Springs, Alabama, U.S.A.

**GASPARD'S**
**QUALITY ITALIAN BEES & QUEENS**

| | |
|---|---|
| 2-lb. pkg. w/q | $3.60 |
| 3-lb. pkg. w/q | 4.25 |
| 4-lb. pkg. w/q | 5.00 |
| 5-lb. pkg. w/q | 6.20 |
| EXTRA QUEENS 1-9 | 1.10 |
| 10-up | 1.00 |

For queenless packages, deduct $1.00.
Health certificate and live delivery guaranteed.
10% books your order, balance 10 days before shipping. Shipping season starts April 1st.
GASPARD BEE CO. HESSMER, LA.

**QUEENS**
**ITALIAN**
NORTHERN TESTED STOCK
A Dependable Source of Good Early Queens
PRICE TO JUNE 1st

| | |
|---|---|
| Singles | $1.50 |
| 2 to 9 | 1.35 |
| 10 to 25 | 1.25 |
| 25 to 100 | 1.20 |

QUANTITY DISCOUNT
**A. J. BOETTGER**
Route 1, Box 1070 Naples, Fla.

When you think of
Bees & Queens

Think of:
**Merrill Bee Co.**
P. O. Box 115
State Line, Miss.

With normal weather all orders should go out on time as our bees are in good condition.

Our 100% satisfaction has been good for 49 years, let us prove it.

**Packages with Queens (Italian only)**

| | |
|---|---|
| 2-lb. pkg. | $3.75 any number |
| 3-lb. pkg. | 4.75 any number |
| Untested Queens | 1.10 any number |
| Tested Queens | 1.50 any number |
| For larger pkgs. add | 1.00 per lb. |

Terms $1.00 per package with orders balance before shipments.

**WEAVER'S "Old Reliable" ITALIANS**

For 35 years a commercial shipper.

| | Queens | Package Bees 2 lb. w/q | 3 lb. w/q |
|---|---|---|---|
| 1 to 24 | $1.40 | $4.75 | $5.95 |
| 25 to 99 | 1.30 | 4.50 | 5.70 |
| 100 and up | 1.25 | 4.25 | 5.45 |

Queens clipped or marked add 5¢ for each operation.

If you truck your bees write us. We have the capacity and "know-how" to load trucks promptly.

**WEAVER APIARIES Phone TA-52312 NAVASOTA, TEXAS**

**Three Band and Pure Italian Hybrid Package Bees and Queens**

We ship pure worker bees by mail, express, or truck. We guarantee live arrival.

**1 9 6 1 PRICES**

| Each with a young laying queen | | 2 lb. | 3 lb. | 4 lb. | 5 lb. |
|---|---|---|---|---|---|
| 1 to 11 | Each | $4.25 | $5.35 | $6.45 | $7.55 |
| 12 to 29 | Each | 4.05 | 5.10 | 6.15 | 7.20 |
| 30 or More | Each | 3.85 | 4.85 | 5.85 | 6.80 |

| | 1 to 11 | 12 to 29 | 30 or more |
|---|---|---|---|
| Untested Queens | $1.40 | $1.30 | $1.20 |

**Tested Queens, $2.00 each.**

For Booster Bees, deduct the price of the queen in quantities.

**ROYAL JELLY ..... $10.00 Per Ounce**

**P. O. Box 265 JACKSON APIARIES Funston, Georgia**

## TEXANS LOOK AT 1961

(Continued from page 75)

least two to five miles if the move is upwind. It's more successful to move upwind," he revealed.

If you're moving colonies less than a mile, move them first about 10 miles, then move them back to the desired location, Thomas suggests.

Thomas recounted an experience when he was a boy. He was moving some bees at night and had obtained the reluctant assistance of a friend. "While we were carrying one large colony, my friend protested that there was a bee crawling on his hand," Thomas related. "Before I could do anything, he dropped his side of the hive and the whole thing scattered in a big mess over the ground with bees stinging us at every step as we ran. It's a good idea," Thomas concluded, "to be careful who is on the other side of the hive."


# Queens

| Italians | 1-24 | 25-99 | 100 up |
|---|---|---|---|
| 2-lb. pkg. | $4.00 | $3.85 | $3.75 |
| 3-lb. pkg. | 5.00 | 4.85 | 4.75 |
| Nice large queens | 1.15 | 1.10 | 1.00 |

Caucasians

Early March Queens

**To clip and paint queens, add 10¢ each queen.**
**For air mail queens, add 5¢ each queen.**

All queens are personally reared, shipped when you want them, and your order appreciated.

Order 1 or 1000

**Mitchell's Apiaries**

**Bunkie, La.**

**PACKAGE BEES AND QUEENS**

**Walker-Lee Co. Live Oak, Calif.**

**PACKAGE BEES & QUEENS**

**Bright 3-Band Italians**

Book your orders **NOW** for package bees and queens. Select queens. Young vigorous bees. Full weight packages. Service, safe arrival and satisfaction guaranteed. Health certificate furnished.

| | |
|---|---|
| **Untested Queens** | **$1.00** |
| **Tested Queens** | **1.75** |
| **2 lb. pkgs. w/q** | **3.75** |
| **3 lb. pkgs. w/q** | **4.75** |
| **4 lb. pkgs. w/q** | **5.75** |

10% down books your orders. Balance 10 days before shipment.

**JOHN A. NORMAN**

**GRADY, ALA. ROUTE ONE**

**California Italian Queens**

Extra Good Breeders

**1 to 24 queens . . . . $1.20 each**
**25 or more . . . . . 1.10 each**

**DAN W. ALVIES**

**670 Roe Road Paradise, California**

ITALIAN
BEES and QUEENS

**W. E. PLANT**

**Rt. 2 Hattiesburg, Miss.**

**GRAY CAUCASIANS**

Quality

**BEES and QUEENS**

Dependable Service
Write for Prices

**Bolling Bee Co.**

**Greenville, Ala.**

## PACKAGE BEES "GULF BREEZE" ITALIAN QUEENS

Write for prices on package bees. We specialize in queens and can supply large numbers for any use. **Prices: 1-9, $1.30 each; 10-49, $1.25 each; 50 up, $1.20 each.**

Mark and clip 5¢ each.

**BESSONET BEE COMPANY Donaldsonville, La.**

## IT PAYS TO BUY McVAY'S
## QUEENS and PACKAGE BEES

| 1961 PRICES | QUEENS By Air Mail | 2-lb. Bees and Queen | 3-lb. Bees and Queen |
|---|---|---|---|
| 1 to 24 | $1.40 | $4.50 | $5.65 |
| 25 to 100 | 1.20 | 4.25 | 5.40 |

PACKAGES BY EXPRESS OR PARCEL POST

For parcel post shipment, add $1.10 for 2-lb. package and $1.20 for 3-lb. package. Difference, if any, will be refunded.

**SMALL ORDERS appreciated and given the same careful attention as large orders.**

**J. F. McVAY Jackson, Alabama**

## OFFERED FOR FIRST TIME

**Dadant's New Starline Hybrid Queens, $1.75 each 100 up, $1.55 each**
**2-lb. package bees headed with these queens ..... 4.75 each**
**3-lb. package bees headed with these queens ..... 5.75 each**

These queens have been tested over a five-year period and according to G. H. Cale, Jr., are superior to all previous Hybrids.

**B. A. ANDERSON Route One Phone HYatt 3-7584 OPP, ALA.**

## BETTER BRED QUEENS — Three Banded Italians

Progress and incentive are the two motivating factors to success. It is time to plan now your packages and queens. Our BETTER BRED QUEENS have proven their superior quality. Let them prove it to you.

| | Queens | 2-lb. w/q | 3-lb. w/q |
|---|---|---|---|
| 1 to 24 | $1.40 | $4.50 | $5.65 |
| 25 to 100 | 1.20 | 4.25 | 5.40 |

**CALVERT APIARIES** Phone Valley 9-6183 **CALVERT, ALABAMA**

## 1961 PACKAGE BEES AND QUEENS 1961

The South's Finest

### IMPROVED 3-BANDED ITALIANS

DIRECT FROM OUR YARD TO YOU

Dependable Service

For choice shipping dates don't wait. Order now. Small orders no deposit required. Over $50.00, 10%. Full pay 10 days before shipping date. Over weight, safe arrival, state health certificate in U.S.A. and Canada.

PRICES

| | |
|---|---|
| 2-lb. pkg. with queen | $3.75 ea. |
| 3-lb. pkg. with queen | 4.75 ea. |
| 4-lb. pkg. with queen | 5.75 ea. |
| Untested queen | 1.00 ea. |
| Tested queen | 2.00 ea. |

**NORMAN BROS. APIARIES RAMER, ALA.**

**Shoot for profit - - - - Shoot for the STAR**

**Order STARLINE queens this season and profit.**

| | QUEENS | | PACKAGES WITH QUEENS | | |
|---|---|---|---|---|---|
| | Starline | Italian | 2 lb. | 3 lb. | 4 lb. |
| 1-24 | $1.75 | $1.45 | $4.75 | $6.00 | $7.00 |
| 25-99 | 1.65 | 1.35 | 4.50 | 5.75 | 6.75 |
| 100-Up | 1.55 | 1.25 | 4.25 | 5.50 | 6.50 |

Packages with Starline queens, add 30¢ per package.
Clipping 5¢ each, marking 5¢ each.

Reg. U. S. Pat. Off.

**GARON BEE CO. Donaldsonville, La.**

**PACKAGE BEES ''ITALIANS'' QUEENS**

Never before have good packages and queens been so important. Serving those who demand the best.

| | 1-9 | 10-49 | 50 up |
|---|---|---|---|
| 2 lb. pkg. with young laying queen | $4.75 | $4.50 | $4.25 |
| 3 lb. pkg. with young laying queen | 5.75 | 5.50 | 5.25 |
| 4 lb. pkg. with young laying queen | 6.75 | 6.50 | 6.25 |
| Extra Queens | 1.50 | 1.40 | 1.30 |

Shipments by Express, Parcel Post or your Truck.
Quality Does Not Cost — It Pays

**THE WILBANKS APIARIES CLAXTON, GEORGIA**


When Answering Advertisements, Please Mention GLEANINGS IN BEE CULTURE


**JENSEN'S QUEENS AND PACKAGE BEES**

| Pkgs. with DADANT "Starline" Hybrid Qns. | 1-24 | 25-99 | 100 up | Pkgs. with JENSEN'S "Magnolia" State Italian Qns. | 1-24 | 25-99 | 100 up |
|---|---|---|---|---|---|---|---|
| 2 lb. | $5.05 | $4.80 | $4.55 | | $4.74 | $4.50 | $4.25 |
| 3 lb. | 6.15 | 5.90 | 5.65 | | 5.85 | 5.60 | 5.35 |

**QUEENS**

| STARLINE | | | MAGNOLIA | | |
|---|---|---|---|---|---|
| $1.75 | $1.65 | $1.55 | $1.45 | $1.35 | $1.25 |

Air Mail Postage Paid on Queens Clipped FREE
Packages F.O.B. Shipping Point Marked 10¢

MACON, MISSISSIPPI Phone 170 J

Reg. U. S. Pat. Off.

**Caucasian Queens or Dadant's Midnites**

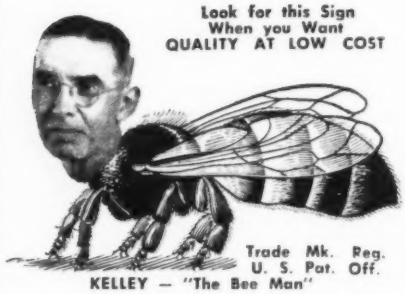
| 1-24 | 25-99 | 100 up | 1-24 | 25-99 | 100 up |
|---|---|---|---|---|---|
| $1.45 | $1.35 | $1.25 | $1.70 | $1.60 | $1.50 |

**PACKAGE BEES WITH CAUCASIAN QUEENS**

| | 1-24 | 25-99 | 100-up |
|---|---|---|---|
| 2 lb. | $4.75 | $4.50 | $4.25 |
| 3 lb. | 5.85 | 5.60 | 5.35 |

For packages with Dadant's Midnite Hybrid Queens add 25¢ to the above prices. For clipping and marking queens add 10¢ each.

**Howard Weaver & Sons Navasota, Texas**




# KELLEY'S

**3-Banded Italian Queens**

KELLEY'S QUEENS by the thousand are available now. If you are in a rush count on us for quick shipment by return air mail.

**Prepaid Air Mail**

**1 to 4 ..... $1.00 each**
**5 & up ..... .75 each**

**Add 5¢ Each for Clipping or Painting (10¢ for Both) and Add 3 Days to Delivery Time.**

## THE WALTER T. KELLEY CO.

## Clarkson, Ky.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